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THE PAPER TRADE JOURNAL.

"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XX.—NO. 41. NEW YORK, OCTOBER 10, 1891. WHOLE NUMBER 910.

Trade Topics.

Hints for Millwrights and Mill Owners.

[WRITTEN FOR THE JOURNAL.]

BY JAMES F. HOBART.

In purchasing an anvil for the mill repair shop considerable attention should be paid to the weight of the tool. There is a rule in use among the makers of blacksmith's tools whereby the weight of an anvil for forging iron should be eight times that of the hammer used; steel, being a harder metal to work, requires an anvil of not less than twelve times the weight of the hammer.

This rule is particularly adapted to figuring the weight of anvils for power hammers, but it applies equally well to small anvils for job work. It shows that a very light anvil is not as good as a heavier one; it also fixes the limit of size.

When loading shafting with pulleys and gears the diameters of the journals should first be determined; the dimension of the shafting at any other point can then be figured from the diameters already obtained. At any point in the shafting the diameter should be proportional to the cubic root of the stress at any given point.

In connection with this matter a journal for operation at a high rate of speed should have a greater length than is required for a low speed. The less the length of a journal the less may be its diameter for a given strain, and consequently the friction will also be less. This rule may be taken into consideration when it is understood that a large surface is required to reduce heating, and as friction increases with the diameter and not with the length of a bearing, it is best to lengthen it rather than to increase the diameter.

A very good proportion for fifty revolutions per minute is to make the length one and one-half times the diameter, and for every fifty revolutions additional two-tenths of the diameter should be added to the length of the bearing. Following out this rule a shaft which is to make 1,000 revolutions per minute should have a length of bearing equal to five times the diameter of the journal.

In covering boilers with non-conducting material it may be well to rate hair felt as 100; then mineral wool will be 88, and if the wool is mixed with tar its efficiency will be reduced to 71 per cent. Sawdust is rated at 68 per cent. and the inferior kinds of mineral wool at 67 per cent.; charcoal and pine wood have 63 and 54 per cent. of efficiency, and ordinary earth or loam is the same as pine wood. Slaked lime is a little less than lime, being rated at 48 per cent. Asbestos is 36 per cent., coal ashes 34, and a 2 inch air space has only 13 per cent. efficiency when compared with hair felt. This may be a surprise to some people who have an idea that air is an excellent non-conducting material; this is not true where the degree of heat ranges from 1,000° to 4,000°, but for comparatively low temperatures between 20° and 35° the air space is very efficient, being almost equal to sawdust.

The conditions are considerably different especially when a steam boiler and a refrigerator are considered.

To protect the bright parts of iron work from rust a varnish may be made of 120 parts of mercury, 10 parts of tin, 20 parts of green vitriol (sulphate of iron), hydrochloric acid, having a specific gravity of 1.2, 15 parts, and pure water may be mixed with the other ingredients in the proportion of 125 parts. This being applied with a brush to the iron work forms a kind of oxide, which is very effectual in preventing the metal from being attacked by the atmosphere.

A lubricant something similar to Albany grease is made out of 100 parts of tallow, 70 parts of palm oil, which should be boiled together, then cooled to 75° or 80°, thoroughly mixed by straining through a sieve, then incorporated with 28 parts of soda and 12 parts water. For winter use 25 parts more of oil may be mixed in in place of the tallow, or a substitution may be made of 1 pound of black lead and 8 parts of water.

A great many processes have been patented for impregnating wood so that it will not decay when exposed to water or the atmosphere. One of the earliest methods is now called kyanizing. This process was invented by Kyan in 1836. He saturated the timber with a solution composed of 1 pound of chloride of mercury and 4 gallons of water. In 1838 Burnett substituted chloride of zinc for the mercury and impregnated the wood by submitting it endwise to a pressure of 150 pounds per square inch; this solution also contains 1 pound of the chloride to 8 gallons of water.

Sulphate of copper has also been used, 1 pound being dissolved in 12½ gallons of water, and the lumber is impregnated with the solution under 15 pounds pressure per square inch.

Bethel invented a process where oil of creosote was mixed with bituminous matter and forced into the wood under a pressure of 150 to 200 pounds to the square inch.

Grooving and Scratching Apparatus.

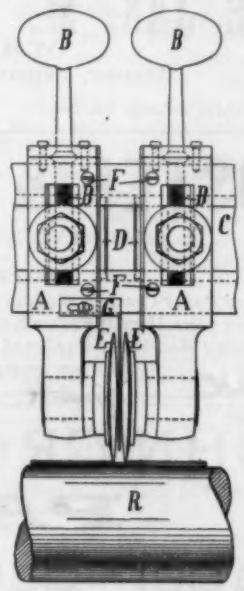
The apparatus herewith illustrated is designed for grooving and scratching straw or wood board employed for making boxes, and without the use of any other tool. It consists of two rotary cutters set at the proper distance apart.

The cutter holder is of usual construction and consists of a cast piece, A, which can be adjusted in a vertical direction by the thumb screw B in the dovetail slide piece D, which itself can be shifted lengthwise in the corresponding groove of the bridge piece C of an ordinary grooving machine, so as to fit the depth and width of a groove to be made, two such pieces A being used side by side.

The cutter E is mounted on the piece A in such a manner that it is quite free on one side and so that it can turn on a pin fixed therein. The sliding piece D is so arranged that it can be set at an angle to the bridge piece C in the horizontal plane; or, what comes to the same, that the cutter E rotates in a vertical plane standing at an angle to the direction in which the mill board to be cut moves. This is the essential part of the invention. The proper angle at which the piece A or the cutters E respectively have to stand obliquely is regulated by means of two set screws, F F, or equivalent means, which press against the bridge piece C and thus raise the piece A at one side. The same effect is obtained by the use of a little wedge, which may be held in a projecting part of the slide piece D by a screw and nut or by equivalent means.

For scratching one knife may be used, which may be put straight or oblique; but two may be used, and they are then approached to each other so much that the cutters touch. If, however, grooves are to be made two knives must be used, and they must be mounted so as to form an acute angle, having its point in the direction in which the board is moved. Both cutters acting so together form, properly speaking, but one instrument, making the groove and raising the chip out of the board in a continuous strip without the use of any other means.

The piece G serves as a deflector to prevent the chip being taken round by the cutters. The grooving without a plane iron (as formerly used), now done by the angular position in the horizontal plane of the two cutters, is based on the following: The two cutters being so arranged that their distance where they touch the mill board is equal to the desired width, they are screwed down to the depth of the groove to be made into the board, thus ripping the latter between themselves and the roller R underneath, projecting just a little over the table T and rotating in the direction indicated. The circumferences of the circular cutters therefore converge in that direction up to the horizontal plane placed through their centre, and they therefore also nip the chip between themselves and so raise it or pull it out of the mill board. It will therefore



GROOVING APPARATUS.

be understood that grooves of any width and depth can be made, the acute angle of the knives having to be increased slightly for making deeper and wider grooves.

Boiling and Bleaching Jute.

[WRITTEN FOR THE JOURNAL.]

BY H. ROMANOFF.

(Continued.)

A certain large mill in Europe making a tough well bulking news, remarkable for its bright color, is now working a simple process for treating jute which was introduced there by the writer and is giving satisfaction, both on account of its cheapness and of the bleaching properties of the half stuff obtained thereby. A description will present points of interest to readers of THE JOURNAL.

The stock is entirely old sacking and similar packing materials. It is far from being uniform, varying from the very finest to heavy, coarse, dark colored sacking, and a careful sorting so as to cook only similar material together is found an advantage. All dirt mechanically removable is taken out by the usual willowing apparatus, and then the stock is cut and torn up by a special machine built for the purpose, which delivers the stock well opened and quite bulky; but, being perfectly open, it packs well in the digester, giving a weight per cubic foot far above what might be expected from a stock so well opened. This ample mechanical preparation was not thought necessary at first, but was readopted for two reasons after being abandoned:

(*a*) It was found to cook more quickly with less steam and softer with than without the preliminary mechanical treatment.

(*b*) The paper was far more free from specks and the screens operated better on the machine.

The digesters used are globular rotaries holding rather more than 2,500 pounds of the packed stock with the usual amount of leeway. The manner in which the digester is packed has a good deal to do with the weight which can be got in, and here an experienced hand is most useful. The amount of lime required varies quite a little, and the coarser the jute the more lime is wanted—that is, within well defined limits, if the lime is well burnt, fresh and non-magnesiferous.

If the lime is not of the best quality there is hardly any telling how much is wanted, and it can only be got at by guesswork. Usually the limit is from 8.5 per cent. to 12.5 per cent., calculated on the gross weight of the jute to be boiled. The cooking is done in the usual manner, by steam, gradually rising to 45 pounds per square inch, at which pressure it is kept to the end of the cook, which takes from eight to twelve, and generally ten, hours. The milk of lime is prepared in the usual manner, the greatest care, however, being taken to sieve well after slacking, and latterly an automatic slacking and sieving apparatus has been put in and gives satisfaction, saving a good deal of trouble. After the cook is complete the liquor is let off, the stock is quickly dumped and thoroughly washed in washing engines without any stacking.

The bleaching engines are of wood and cement, holding 1,500 to 1,800 pounds of jute half stuff, and about 3,000 American gallons of water. After filling in and allowing time for the fibre to be well distributed through the water, the bleaching solution is run in from a tank which always delivers the same quantity. This bleaching solution is carefully prepared so as to be quite clear and runs from 2½° to 3° B. The quantity of bleaching solution which is introduced at one time contains about 10 pounds of free chlorine, calculated on the usual 35 per cent. basis. The bleaching liquor is allowed to act until the whole of it has been absorbed by the incrusting matter of the jute. Whether this has taken place or not is easily ascertained by a test made with a special test paper.

The test paper is made as follows: A few grams of starch are boiled into a mucilage with distilled water, and about a gram of potassium iodide is added. The mixture is absorbed in filter paper of good quality, which is dried by being hung upon a string anywhere out of the reach of the fumes of burning gas, &c. When dry the pores of the paper contain starch globules, together with a little potassium iodide. The moment that the damp paper comes into contact with free chlorine, nitrous acid or a similar oxidizing agent iodine is liberated from the potassium iodide, which combines with the starch to form blue starch iodide. This test is used as above in connection with bleaching jute. When the test shows that no more free chlorine is present another similar quantity of clear bleaching fluid is furnished, and so on until the shade desired is reached. The amount of chlorine required of course varies with the nature of the jute and the shade required, but runs between 9 and 11 per cent. This is calculated on the gross weight of the jute to be bleached and usually averages about 9⅛ to 10 per cent. for a good bright white.

The process has proved economical; it gives very uniform, well cooked stock; the paper is well closed and free from specks and exceedingly strong. That better processes can be used is an undoubted fact, but this one fills the bill for making superior news.

There has been discovered near Bucaramanga, Colombia, a mineral substance not unlike asbestos, which has the color of amber, is perfectly transparent and incombustible. Experiments made with this material indicate that it will be invaluable for the manufacture of bank note paper and other uses. It can be reduced to pulp and molded into light fire and water proof tiles for house covering, or woven into pliable fireproof cloth. There appear to be inexhaustible deposits, and a ready market is promised for all that can be taken out.

Wrapping Papers for Silver and Steel.

[WRITTEN FOR THE JOURNAL.]

Fine wrapping papers for polished steel and silver are an important branch of trade, as they are used in large quantities, both the domestic made and imported. Their manufacture does not differ to any extent from that of ordinary tissues as far as the mechanical treatment goes, but in the preparation of the stock far more care and attention is essential if a product is to be obtained which can be sold under guaranty that it will not tarnish the finest cutlery and surgical instruments (which are always packed with paper) or silverware or silver foil.

An excellent method of testing its suitability for these purposes consists in placing a few leaves of pure silver foil interposed and covered top and bottom with double layers of the paper to be tested. The package should be allowed to remain without being weighted for a few days in a moderately damp place and then a heavy weight imposed. After about a week the silver foil can be removed for examination. Should it show dark brown or black spots the paper will contain impurities, which will affect silver or steel. There are two chemical compounds liable to occur in paper, particularly in white paper, which have this prejudicial action on silver or steel ware, viz., the causing of tarnish, and these are (*a*) ultramarine and (*b*) chlorine compounds occurring together with excessive sulphate of alum or potash alum. A common mistake made by consumers of this class of papers consists in requiring that the paper furnished for such purposes shall be bleached to a pure white.

Were this absurd trade custom abolished we should hear less of fine steel and silver ware being tarnished by wrapping papers, and paper splendidly adapted to the work could be produced and furnished at much lower cost than now. The fine white tissue employed for wrapping is mostly got up to shade by the use of ultramarine, which is a color containing a good deal of sulphur, besides being easily decomposed. Moist air is quite able to effect this decomposition, especially if there are any free chlorides in the paper or any free sulphate of alumina, or if the articles are stored in a place where gas is burned.

The first decomposition product of ultramarine is sulphuretted hydrogen, which if present even in the faintest trace will immediately tarnish any silverware with which it may come in contact.

This tarnish is nothing more nor less than a formation of sulphide of silver. Paper for this purpose should not contain a trace of ultramarine. If it must be white, cobalt blue or indigo ought to be used, as they contain no sulphur, but there is no reason whatever beyond trade usage why unbleached paper shall not be used for wrapping silverware.

Fine tissues made from unbleached stock are also far stronger than paper made from the same stock bleached. This is a consideration worth noting for wrapping purposes.

Until lately the chemistry of the sizing and bleaching of paper was little understood, and what little was known about it was based to a considerable extent on incorrect assumptions. The investigations and experiments, however, of Lunge, Würster, Conradin and others have thrown much light on the subject, and among others also on the question of the cause and cure of tarnishing. It was formerly believed that free chlorine existed as such in bleached paper stock which had been improperly or carelessly washed, and that this was the cause of the tarnishing of silverware and rusting of steel goods.

Since the chemistry of the manufacture has been better investigated, it is admitted by those who are posted that free chlorine

(*Continued on page 899.*)

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(*Continued from first page.*)

as such cannot exist in paper, particularly in sized paper, and that the objectionable compounds are chlorides, particularly if any appreciable excess of aluminum sulphate is also present. The idea so long and tenaciously retained by experimenters that in some cases sized paper contained traces of free chlorine is undoubtedly due to the fact that, as Dr. Casimir Würster has demonstrated, traces of the oxides of nitrogen will give similar, in fact identical, reactions to chlorine.

By means of the so-called Griess test papers, manufactured by Schuchardt, of Goerlitz, proof has been given that when paper of any kind is stored in places where gas is burnt nitrous acid can always be detected in the paper, and as nitrous acid and chlorine give the same reactions in the usual tests for traces of both substances the cause of the error is easily explained.

Griess' test papers are a very delicate test, indeed, for nitrous acid. The red paper shows the presence of even traces of nitrous acid by a distinct change of shade, while the yellow variety is changed to a deep reddish brown. Bleached stock, if not very carefully washed, may contain the chlorides of iron, sodium and calcium, and paper made from such stock may also contain an excess of free sulphate of alumina, unless the proportion of this latter constituent has been so regulated in sizing as to have present just enough and no more.

Now to answer the question "What difference does the presence of small quantities of these compounds make?"

Chloride of sodium, chloride of calcium and chloride of aluminum are all active chemical agents, both in their action on vegetable fibres at high temperatures, as on the dryers of a paper machine, and also in their power of rusting steel and tarnishing silverware, but chloride of sodium is less virulent than chloride of calcium, and both are largely exceeded in activity by the chlorides of aluminum and iron. Hence, papers for the wrapping purposes in question ought always to be purchased under guaranty that they do not contain the chlorides of iron, sodium or calcium, nor free sulphate of aluminum, as the latter salt in presence of the above mentioned chlorides is easily converted into chloride of aluminum, which is the real author of all the mischief formerly attributed to free chlorine.

It should be borne in mind that the tarnish caused by the action of chlorides on silverware is totally different from that caused on the same by ultramarine. That caused by chlorides is due to the formation of chloride of silver, which is easily blackened by the action of light, this being the compound on which the old daguerrotype process of photography was based. That caused by ultramarine is due to the formation of the black sulphide of silver. Rusting or tarnishing of steel, however, by whatever caused, is due to the formation of oxide of iron induced by the presence of chlorine and moisture.

The following is a reliable method of testing paper for (1) chlorides and (2) free sulphate of alumina: About 1 to 5 grams of the paper to be tested are torn into pieces of, say, 2 inches square, and each crumpled up separately. This is done to avoid clogging in the subsequent boiling operation. The crumpled up pieces of paper are filled into a flask so that not more than one-fourth of the total capacity is filled with paper, and the flask is half filled with distilled water, with which a blind experiment has been made after boiling in the same flask.

A long air condenser is placed on the flask and the water is boiled until the paper is well pulped. The contents are then filtered quickly through a Swedish filter and the clear filtrate is divided into two equal volumes. To the one an acid solution of nitrate of silver is added, which reagent will show the presence of chlorides by a thick curdy white precipitate of chloride of silver turning black on exposure to light. The other portion of the filtrate is concentrated and a few drops of ammonia are added. If any alumina is present it will be precipitated on boiling as a finely divided white or almost colorless precipitate.

Specially prepared papers are also made for the external packing of silverware—that is, for outside wrappers—when goods are shipped any distance or by sea. These are papers to which one of the following named substances has been added in the rag engine (or else deposited in the paper by appropriate treatment with chemical solutions), *viz.*, (1) oxide of lead, (2) oxide of zinc and (3) metallic zinc powder. In case the last—zinc powder—is to be used, it may be either added in the rag engine or mixed with flour paste and brushed on the paper the same as in staining by hand. It is claimed that zinc powder has a great affinity for sulphuretted hydrogen, but paper prepared with either "zinc white" or "lead white" is to be recommended in preference. Both can be applied in the same way as zinc powder, or, better still, the unsized paper is reeled through a vat containing either a solution of zinc or lead, as the case may be. The paper is then dried and sprayed with a dilute caustic soda solution, which acts on the salt held in the pores of the paper, producing "zinc white" or "lead white," according to which salt has been used.

By far the most protection is afforded by wrapping with paper prepared as above described, with lead, owing to the great affinity which the oxide of lead has for sulphuretted hydrogen, forming black sulphide of lead and freeing any air which may pass through it from any trace of sulphuretted hydrogen, and so preventing its having any action on silverware. Paper prepared with zinc acts similarly but less perfectly, owing to the fact that there is less affinity between zinc oxide and sulphuretted hydrogen than between lead oxide and the same gas.

Correspondence.

Boston Notes.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 Federal Street,
BOSTON, October 8, 1891.

The long dry spell so far experienced is having quite an influence in some directions.

The West also seems to be suffering from short water, and some large manufacturers are in this market after ground wood pulp.

A local manufacturer, whose supply of ground wood pulp is usually in such large quantity as to supply his own wants and leave a part for sale, is now forced to buy pulp, and is paying ¼ cent more per pound than what he sold for a month or two ago.

Another manufacturer said that if present conditions lasted much longer paper would have to advance. Jute stocks were referred to as being higher in price, the advance in pulp was noted, and with the higher price of bleaching powders was instanced as a reason for an advance in the price of paper.

Because of the scarcity of water, he said, almost every mill in the country was forced to cut down its daily product, while the consumption of paper was increasing, and orders could not be filled without delay.

Even local paper dealers are complaining because their orders remain so long unfilled.

A manufacturer of manilla papers claims to be thirty days behind in his deliveries, with a prospect of being still further delinquent unless the water supply improves.

From Holyoke word comes that all of the mills will shut down to-day for twelve hours because of low water.

So it will be noted that a scarcity of water is getting to be a serious matter.

Under these conditions a heavy demand for rags cannot be expected. Nor is there much of anything doing in this line at the present time. Importers are quietly waiting for better times, not neglecting a chance to make a dollar when the chance offers, however.

Domestic rags are reported to be moving fairly well, especially some of the fancy grades, like Corbett's "Excelsior" and "Star" packings.

Imports of paper stock for the past seven days include 1,782 bales of rags, 526 coils of manillas and 943 bales of low grade stock, besides 571 bales of wood pulp and 1,283 bags of sizing.

The receipt of paper makers' chemicals for the week were 799 casks of bleaching powders, 100 drums of caustic soda, 262 casks, 420 bags of soda ash and 280 barrels of soda crystals.

There is very little doing in chemicals, although the market holds very firm. Sales of bleaching powders are made this week at 2.15c. from store, 2⅛c. being quoted to arrive. Other quotations are: Caustic soda, 2.97½@3c.; soda ash, 1.55@1.60c., and soda crystals at 1.10c.

Ex-Gov. P. C. Cheney, of Manchester, N. H., spent a day of this week in Boston en route for Washington, where Mrs. Cheney is at present located as guest of Mrs. President Harrison.

Other recent visitors were J. Lewis Sampson, of Middletown, Ohio; Frank P. Carpenter, of Manchester, N. H.; Charles Mayo, of Lawrence, Mass.; Sam Rust, of Holyoke, Mass., and Campbell Chapin, of Springfield, Mass.

James B. Forsyth will probably spend next week in New York.

C. H. Greeley, representing Lombard & Co., pulp stone importers, is making a tour of the pulp mills of New England and neighboring States. Mr. Greeley is not a stranger to pulp manufacturers, nor are pulp makers unacquainted with the merits of the English Newcastle pulp stone, which Lombard & Co. import for the American trade. This line of pulp stone is recognized to be far superior to any pulp stone in the market, and many pulp makers will not use any other grade of stone.

W. T. Barker, secretary of the American Paper Manufacturers' Association, left Boston to-day en route for Washington, D. C., on business connected with the State Department, paper and reciprocity. At present the State Department is giving some attention to the framing of a reciprocity treaty with Mexico; and Mr. Barker had so interested himself in the matter of having paper free from duty under this pending treaty that W. F. Wharton, acting Secretary of State, had telegraphed his desire to meet the representatives of the paper trade in Washington on Friday of this week.

Mr. Barker has prepared quite an able argument, accompanied by statistics, which he will present to the State Department.

Col. Edward H. Haskell, president of the Boston Paper Trade Association, is also making strong efforts to have paper favorably considered by the framers of reciprocity treaties, and he will also proceed to Washington and join Mr. Barker there.

Lawrence, Mass., had a local exhibition recently, at which were displayed the industries of Essex County. The Russell Paper Company, with pardonable pride, made a fine exhibit of its paper products, and this company was the only one making a display of paper. In the centre of the display was a fine portrait of William Russell, father of Hon. William A. Russell, and the oldest living paper maker in the United States.

The Boston Paper Trade Association will hold its next meeting on the evening of October 21, at the Parker House.

DELESDERNIER.

Holyoke Notes.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, MASS., October 8, 1891.

The matter which interests the industries in this city the most just now is the water supply, and the situation is becoming more serious each day. To-day the water in the river is 2 feet below the crest of the dam, which is the lowest that it has been for a long time, and unless we have some heavy rainfalls soon we shall need the services of the rain makers as badly as they have required them in Texas and elsewhere. The mills have been placed under restrictions again as to the use of water, and they may have to resort to steam power ere long. Over the river, at South Hadley Falls, the manufacturers are even worse off than on this side. The Hampshire, Carew and Glasgow mills were obliged to shut down yesterday morning, because the wheels could not be started owing to a lack of water. They will be obliged to remain idle until relief comes in the shape of rain. The supply of city water is also growing beautifully less every day, and unless something favorable happens very soon we shall have to take to drinking river water, if the Connecticut itself does not dry up. Anyone can cross the bed of the river between this city and South Hadley Falls below the dam without wetting his feet. Down the river, at Hartford, they have begun pumping the water from the river for drinking and cooking purposes. The pumps furnish about 3,000,000 gallons every twenty-four hours, while the amount required by the city is 5,000,000 gallons. The water is boiled before it is used.

A curious accident which occurred at the Holyoke Water Power Company's electric light station the other evening plunged the city streets and some places of business into darkness for an hour or more. A 68 inch pulley attached to one of the main driving shafts burst, causing considerable damage and shaking the building as if an earthquake had occurred. A large section of the pulley, weighing fully a quarter of a ton, tore through a 4 inch plank floor and damaged the brick wall. Other pieces made havoc with the street and store wires and played the mischief generally. A huge belt was thrown across the room and tore a double door from its hinges. The pulley was making 300 revolutions a minute and the surface was traveling at the rate of more than a mile a minute when the break occurred. Two employees narrowly escaped with their lives. As the machinery is interchangeable the lights were soon running again and repairs are now being made.

The directors elected at the recent annual meeting of the Board of Trade have organized for the year, with these officers: President, William Whiting; vice-presidents, E. S. Waters, W. S. Loomis; secretary, John Hildreth; treasurer, C. A. Corser. The working committees have also been appointed and the board is in good shape for another year's work. It is to be hoped that the record will be good.

The Hampden Glazed Paper Company has broken ground for the new addition to its building at the South End. It will be 65x40 feet in dimensions, one story high, and will be used as a coloring room.

A. N. Mayo, of Springfield, is building a

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Have on hand and to arrive all grades of Bleached and Unbleached
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large storehouse to cost about $26,000, and F. A. Rivers, of this city, has the contract. It will be located on Lyman street, and will be 89x84 feet, five stories high, and will contain over one million of brick.

Work on the new mill of the Norman Paper Company is being pushed very rapidly by the contractors, and it is hoped to have the plant ready to start up by January 1. It will cost in the vicinity of $300,000 and will be one of the best equipped mills in the city.

J. S. McElwain, of the Parsons Paper Company, and H. E. McElwain, of the Valley Paper Company, have moved into the house which they recently bought on Essex street. It has been thoroughly remodeled and improved.

The George R. Dickinson Paper Company has had no trouble in filling the places of the striking calender men, and that department is now running as usual.

Landers Brothers have burned over five million brick at their yard in South Hadley Falls this season. It has been an excellent season for brickmaking, the weather has been so dry, and the work has been finished this year earlier than usual.

Ex-Congressman Whiting has just finished a nice summer residence on the country road between Williamsburg and Worthington. The style of architecture is antique, with a gambrel roof similar to the roofs of our grandfathers' days. The house contains sixteen rooms, five of which will be used by the farmer and his family. The house commands a fine view of the surrounding country and has wide verandas around the sides.

The water was drawn from the canals at midnight on Wednesday, and the mills were shut down until this noon. H.

On Chrome Colors.

[TRANSLATED FOR THE JOURNAL.]

In manufacturing the chromates of lead both soluble and insoluble lead compounds may be employed, the insoluble salts (sulphate, &c.) being cheaper; but soluble salts, such as the acetate, yield a superior product.

From no other lead compound can so many various shades of yellow chromate be made as from the acetate, nor does any other salt give a chromate with similar physical properties. The acetate of lead (sugar of lead) used in making chrome colors is generally made as follows:

A lead lined pan is charged with oxide of lead (litharge), which has been powdered by being treated in a Kollergang. Previously about half the quantity required of acetic acid at 6° Baumé (30 per cent. real acid) has been introduced into the pan, which is provided with a steam pipe passing to the bottom and the litharge (mixed with enough water to bring it to a fine cream) is sieved in with constant stirring while the acid is being boiled. After all is dissolved the remainder of the acid required to form the neutral compound is introduced, the point of completion being determined by a precipitation test with a 5 per cent. solution of mercuric chloride. The absence of a precipitate with this reagent indicates the conversion of the basic acetate into the neutral compound required.

To make orange chromates it is better to employ the basic salt on account of cost, beauty of shade and also of the variety which can be produced. To make it the pan should have a capacity of about 300 litres (80 United States gallons). The charge of acetic acid at 6° Baumé is 79 kilogs. (174 pounds), which is heated up to about 90° C., steam being admitted so as to keep the temperature at above 70° C.; 120 kilogs. (264 pounds) of litharge are added as above described, the cream being worked through the sieve with a stiff brush. All depends upon how quickly the litharge is added (the more quickly the better); also the sieve must be very fine—say No. 120. If any of the cream is dumped into the acid without sieving hard lumps will be formed and not be acted upon by the acid. Carefully stirring is also essential, and if on thickening and turning pure white the mixture becomes too thick for working more water must be added; but this should be avoided as much as possible, on account of retarding the combination.

After the reaction is complete the pan is covered up and allowed to rest for about twelve hours. The mass should be quite hard and white and contain no unaltered oxide of lead in lumps. To turn this basic acetate into chromate it is worked into a cream with water, and in order to remove the metallic lead which is found in all ordinary litharge the creaming operation is carried on in a paint mill. After the mixing has been duly accomplished the metallic lead can be removed from the grooves of the stones where it has been deposited. It is advisable to test all litharge used for making chrome colors for copper, as the presence of this impurity will materially impair the shade of the chromate produced. The copper test is carried out as follows:

Ten grams of the oxide to be tested are treated with 20 cubic centimetres of ammonia and a few drops of nitric acid. The mixture, after stirring, is allowed to stand for six hours and then passed through a filter. The filtrate is made acid with acetic acid, and a few drops of 10 per cent. ferrocyanide of potash solution are added. If more than a slight brown color is produced the litharge contains too much copper to be used for color making purposes. Another matter of importance is the physical condition of the oxide of lead, and an experiment should always be made in the laboratory before using on the manufacturing scale.

MIXINGS FOR CHROME YELLOWS.

I.—For Soluble Lead Salts.

Lead acetate (sugar of lead)	pounds. 220
Bichromate of potash	39.5
Sulphuric acid (60° Baumé)	26.5

The yellow obtained by this mixing has the composition $PbCrO_4PbSO_4$. The water used should not be less than 264 gallons, and if nitrate be used double this quantity is required. In this case the nitrate should be neutralized with magnesite and the sulphate of an alkali or of magnesium, but preferably of aluminium, should be substituted for the sulphuric acid; thus, the lead and bichromate remaining the same, 13¼ pounds of magnesite and 59½ pounds of aluminium sulphate would be added.

II.—For Basic Acetate.

Litharge	pounds. 167¼
Acetic acid (30 per cent)	92½
Bichromate of potash	47¼
Sulphuric acid	47¼
Water	U. S. gallons. 528 to 792

To make the color denser 22 pounds of soda should be added to the acetate and 22 pounds of sulphate of alumina used instead of 11 pounds of sulphuric acid.

Orange chrome is mixed as follows:

Litharge	pounds. 167¼
Acetic acid (30 per cent.)	92½
Bichromate of potash	53
Ammonia soda (58 per cent.)	33
Caustic soda (100 per cent.)	11

Care must be taken to keep the temperature down, or the shade will be impaired.

III.—For White Lead.

The white lead should be very finely reduced and suspended in water.

White lead	pounds. 220
Nitric acid (36° Baumé)	26¼
Bichromate of potash	28¼
Aluminium sulphate	22

Or

Nitric acid (40° Baumé)	pounds. 96½
Bichromate of potash	82¾
Aluminium sulphate	44

The latter mixing gives the most fiery shade. Orange is mixed on this system as follows:

White lead	pounds. 220
Nitric acid (30° Baumé)	39½
Bichromate of potash	61½
Caustic soda	17½

The soda should be added to the bichromate before the precipitation takes place and the temperature must be kept between 63° C. and 75° C.

IV.—For Basic Chloride.

The same mixings, &c., are used as with white lead.

V.—For Sulphate of Lead.

Lead sulphate	pounds. 220
Bichromate of potash	52½ to 99
Ammonia soda (58 per cent.)	19¼ to 35¼
Ammonia liquor (24 per cent)	2¼ to 4½
Acetic acid (30 per cent.)	11 to 22

The sulphate of lead is made into a cream and gradually stirred into the other drugs which have been previously dissolved.

ZINC CHROME COLORS.

Lead chromates range from pale lemon to deep granite red. But very little variation is possible with a zinc chromate, which is also quite different to the corresponding lead compounds. Zinc yellows have not as much coloring power as lead chromes, but are faster against the action of sunlight and not so poisonous. More than 80 per cent. of the total quantity of zinc yellow made each year in Germany is used for mixing with prussian blues to make zinc greens, which go largely to Holland, Switzerland and Hungary.

Commercial zinc yellows vary a good deal in their composition. Generally they are the acid chromates of zinc and potash, while basic chromates do not occur often. Usually zinc salts contain iron, which has to be precipitated and removed before the zinc salts can be used for color making. This can be accomplished most simply by oxidizing (by heat) the iron with permanganate and so bringing it into the ferric state. If, then, zinc hydrate is added—not necessarily free from iron—and the whole well stirred, this will be found to throw out all iron which can be filtered out. A chromate added to such a solution throws out yellow $ZnCrO_4$, which, however, has no value, as it is too soluble in the precipitant liquid. If instead of the chromate an excess of bichromate be used the zinc precipitate takes up some of the alkaline salt forming $(ZnCrO_4)_3K_2Cr_2O_7$, which can be washed without fear of solution, but dries up hard and gritty, hence is no good, although its color is fine. If the two solutions are neutralized before mixing a better yield of chromate is got. Still, much chromic acid is lost, which makes the process too expensive to be profitable.

Formerly calcium chloride was added to the neutral solutions so as to get some of the acid in the form of calcium chromate mixed with the zinc compound. The best results have been obtained by adding to the zinc salt enough alkali to decompose 25 per cent. of it; this will produce a chrome of the formula $(ZnCrO_4)_3ZnO$. Enough alkali should also be used with the bichromate to turn it into the neutral chromate. Sodium bichromate cannot be used in making zinc yellows.

Zinc yellows as made nowadays are always thrown out from acid solutions, and are double salts of zinc chromate and potassium bichromate. A variable quantity of unaltered zinc oxide is also present, which gives "body" to the color. Zinc oxide is met in a very pure state, and is mixed with enough sulphuric acid to convert it into basic zinc sulphate. After adding the bichromate of potash the mixture is stirred for about an hour. The color as $(ZnCrO_4)_3K_2Cr_2O_7$ separates out as a scum on the liquid.

A good mixing is the following:

Zinc oxide	parts. 100
Sulphuric acid (66° Baumé)	90
Bichromate of potash	100

It is recommended to soak the zinc oxide for twenty-four hours in water before mixing, and the sulphuric acid is to be diluted and added gradually. Care must be taken to have and keep all cold and to keep stirring all the time to avoid the formation of a gritty color.

COLORS CONTAINING CHROMIUM OXIDE.

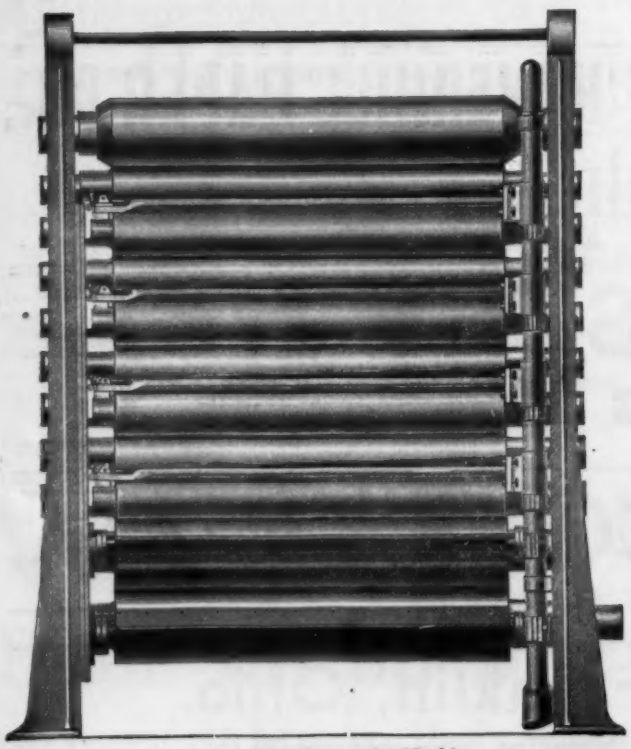
Oxide of chromium itself has no value as a pigment, but two pigments containing this oxide are of interest, viz., Guignet's green and Plessy's green. Guignet's green is an oxyhydrate of chromium, having the formula $Cr_2O(OH)_4$. It is quite unchanged by solar action, and but little by chemicals, hence is employed for printing bank notes as well as in lithography and calico printing. It is made by melting potassium bichromate and boric acid at a low temperature (about red heat). The chromium borate thus obtained is decomposed into chromium oxyhydrate by the action of water.

Plessy's green contains chromium phosphate and is one of the best of its class, if cost, as well as pigment qualities, is taken into consideration. Plessy's green is made by treating a mixture of potassium bichro-

(Continued on page 903.)

SMITH'S PNEUMATIC CALENDER FEED.

Patented September 29, 1885; November 16, 1886; other Patents now pending. This Machine is also Patented in England, France and Germany.



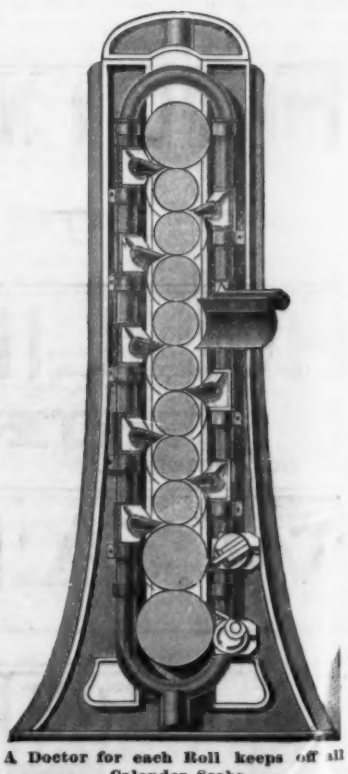
Applied to Calender on the Machine.

THE DANGER TO PAPER MACHINE TENDERS and the LOSS IN BROKEN PAPER at the CALENDER ROLLS MAKE THIS INVENTION OF ESPECIAL VALUE FOR THE REASONS THAT:

It prevents all danger and risk to the person of the operatives ordinarily incident upon leading the paper through the stack.
It avoids "making broken" in the stack, as the doctors prevent the paper from clinging to the rolls, and as the action of the doctors upon the individual rolls removes any and all calender spots from their surfaces, the latter are kept in perfect condition, thereby preventing defacement or injury to the paper, which would otherwise be the case; also by keeping the rolls clean, removing all dust and grit, the necessity for frequent grinding of the latter is avoided.
The blower or fan which supplies the air should be located in some place where cold moist air can be obtained, and as this cold air is supplied through the doctors to the surface of the rolls the latter are prevented from heating, and a better and more uniform surface is given to the paper.
In operation, the paper is introduced at the top roll and is conducted automatically between the other rolls, emerging from the bottom, and can be conducted immediately, without loss, to the reel.
Among Paper Manufacturers now using *Smith's Pneumatic Calender Feed*, all of whom indorse it most highly, are:

POLAND PAPER CO.,	Mechanic Falls, Me. (1)	H. POWELL RAMSDELL,	Salisbury Mills, N. Y. (4)
WEBSTER PAPER CO.,	Orono, Me. (2)	HERKIMER PAPER CO.,	Herkimer, N. Y. (2)
SUGAR RIVER PAPER CO.,	Claremont, N. H. (1)	ADAMS & BISHOP CO.,	Newburgh, N. Y. (2)
GLEN MANUFACTURING CO.,	Berlin Falls, N. H. (5)	ONTARIO PAPER CO.,	Watertown, N. Y. (2)
WINNIPISEOGEE PAPER CO.,	Franklin, N. H. (5)	FORT ORANGE PAPER CO.,	Castleton, N. Y. (2)
FALL MOUNTAIN PAPER CO.,	Bellows Falls, Vt. (7)	FRONTENAC PAPER CO.,	Dexter, N. Y. (1)
WILDER & CO.,	Olcott Falls, Vt. (3)	ST. LAWRENCE PAPER CO.,	Dexter, N. Y. (1)
MONTAGUE PAPER CO.,	Turner's Falls, Mass. (4)	NIAGARA PAPER CO.,	Niagara Falls, N. Y. (1)
HAVERHILL PAPER CO.,	Haverhill, Mass. (2)	CLIFF PAPER CO.,	Niagara Falls, N. Y. (2)
G. W. WHEELWRIGHT PAPER CO.,	Leominster, Mass. (1)	FONDA LAKE PAPER CO.,	Watertown, N. Y. (1)
SYMS & DUDLEY PAPER CO.,	Holyoke, Mass. (1)	JEFFERSON PAPER CO.,	Black River, N. Y. (1)
RUSSELL PAPER CO.,	Lawrence, Mass. (8)	TAGGART BROS. CO.,	Watertown, N. Y. (2)
WINONA PAPER CO.,	Holyoke, Mass. (2)	M. & W. H. NIXON PAPER CO.,	Manayunk, Pa. (4)
PAGE PAPER CO.,	Hardwick, Mass. (1)	P. H. GLATFELTER,	Spring Forge, Pa. (5)
G. R. DICKINSON PAPER CO.,	Holyoke, Mass. (1)	W. C. HAMILTON,	Philadelphia, Pa. (1)
EXCELSIOR PAPER CO.,	Holyoke, Mass. (1)	CLARION PULP AND PAPER CO.,	Johnsonburgh, Pa. (1)
FAIRCHILD PAPER CO.,	Pepperell, Mass. (1)	JESSUP & MOORE PAPER CO.,	Wilmington, Del. (1)
TILESTON & HOLLINGSWORTH,	Matapan, Mass. (2)	G. H. FRIEND PAPER CO.,	West Carrollton, Ohio. (1)
BRIDGE MILL C. M. CO.,	Pawtucket, R. I. (1)	VAN NORTWICK PAPER CO.,	Batavia, Ill. (2)
BRIDGEPORT PAPER CO.,	Bridgeport, Conn. (2)	BREMAKER-MOORE PAPER CO.,	Louisville, Ky. (2)
C. H. DEXTER & SON,	Windsor Locks, Conn. (2)	KIMBERLY & CLARK,	Kimberly, Wis. (4)
F. R. WALKER & SON,	Burnside, Conn. (1)	CENTRALIA PULP AND WATER POWER CO.,	Centralia, Wis.
HUDSON RIVER PULP AND PAPER CO.,	Palmer Falls, N. Y. (4)	CALIFORNIA PAPER CO.,	Stockton, Cal. (1)
REMINGTON PAPER CO.,	Watertown, N. Y. (2)	RIORDAN PAPER MILLS,	Merritton, Ontario. (2)
GLENS FALLS PAPER MILL CO.,	Glens Falls, N. Y. (4)	TORONTO PAPER MILL,	Merritton, Ontario. (1)
FRANK GILBERT,	Watertown, N. Y. (1)	ANDERSON PAPER CO.,	Anderson, Ind. (1)
TICONDEROGA PAPER CO.,	Ticonderoga, N. Y. (1)	DENVER PAPER MILL CO.,	Denver Col.
LAKE GEORGE PULP AND PAPER CO.,	Ticonderoga, N. Y. (2)	WILLAMETTE PULP AND PAPER CO.,	Oregon City, Ore.

Convincing testimonials as to the real merits and advantages of SMITH'S PNEUMATIC CALENDER FEED will be shown upon application. The entire device is compact, readily adjusted, and enables large stacks to be easily and efficiently managed with least labor, and with but little or no loss of broken or damaged paper.



A Doctor for each Roll keeps off all Calender Scabs.

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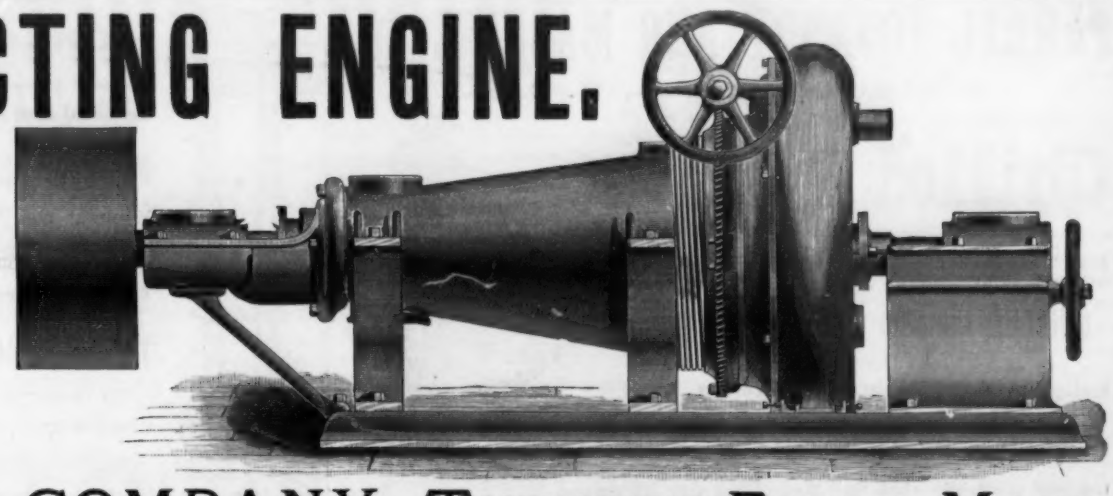

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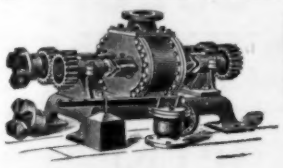

HOLYOKE MACHINE CO., HOLYOKE, MASS.

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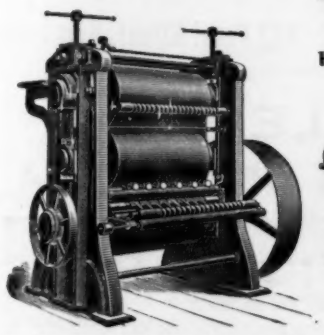

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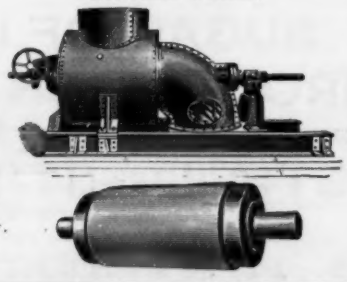
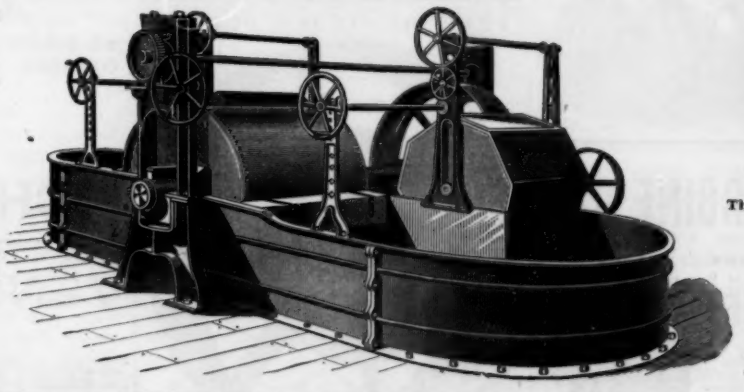
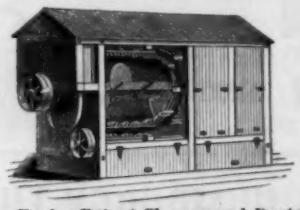
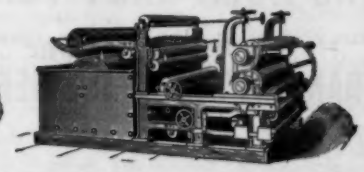
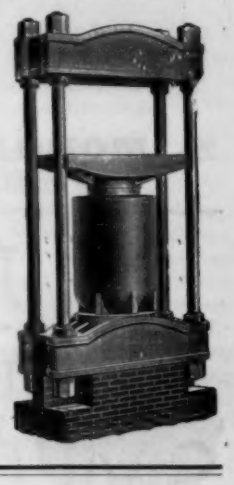






The Taylor Patent Cleaner and Duster.





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THE BAGLEY & SEWALL CO., WATERTOWN, N. Y.,

MANUFACTURERS OF

FOURDRINIER PAPER MACHINES

AND

PULP AND PAPER MACHINERY.

G. W. KNOWLTON, Pres. Office of THE ONTARIO PAPER CO., JOHN A. DECKER, Supt.

WATERTOWN, N. Y., August 12, 1890.

THE BAGLEY & SEWALL CO.:

GENTLEMEN—The following is the record of the 86 inch wire Fourdrinier Machine purchased of you for the past week:

August 4, . .	24,335 lbs.	August 6, . .	24,020 lbs.	August 8, . .	23,337 lbs.
August 5, . .	23,390 lbs.	August 7, . .	24,010 lbs.	August 9, . .	24,865 lbs.

Average per day, . . . 23,992 lbs.

These figures are the net shipping weight of the paper, averaging 31 lbs. to the ream, 24 × 36 in.

Yours respectfully, E. B. STERLING, Sec'y.

FRONTENAC PAPER CO.,

DEXTER, N. Y., August 20, 1890.

BAGLEY & SEWALL CO., WATERTOWN, N. Y.:

GENTLEMEN—At 8:30 to-night our machine tender shut down to put on a NEW FIRST FELT. The paper was off the reel less than ELEVEN MINUTES. It cannot be done on any other make of machine than the BAGLEY & SEWALL.

Hastily,

F. W. SPICER, Sec'y and Treas.

THE CENTRAL PAPER AND FIBER CO.,

CLEVELAND, OHIO,

MANUFACTURERS OF

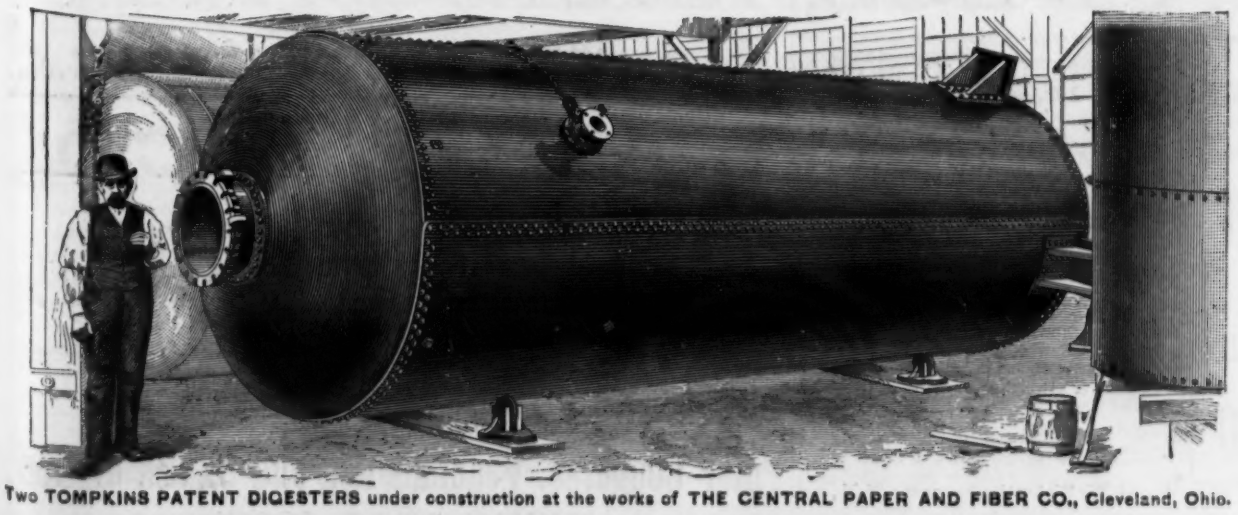
Paper and Fiber Machinery,

CHEMICAL WOOD PULP DIGESTERS,

Rotary Bleachers, Boilers, Tanks,

TOMPKINS PATENT DIGESTERS.

CONTRACTS TAKEN TO FURNISH MILLS COMPLETE.



Two TOMPKINS PATENT DIGESTERS under construction at the works of THE CENTRAL PAPER AND FIBER CO., Cleveland, Ohio.

FARREL FOUNDRY AND MACHINE CO.,

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THE LARGEST MANUFACTURERS OF

Chilled Rolls

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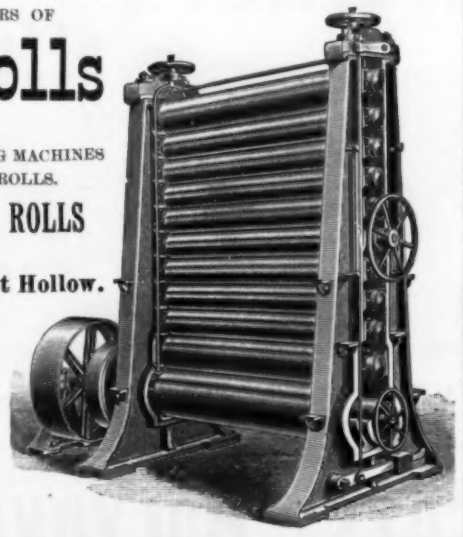
FOR ALL PURPOSES.

Rolls Bored for Steam or Cast Hollow.



COMPLETE CALENDERS.

Lift Rods operated by wheels above for raising any number of the rolls.

Housings so made that the rolls may be taken out endwise through frame.

OLD ROLLS RE-GROUND AT SHORT NOTICE.

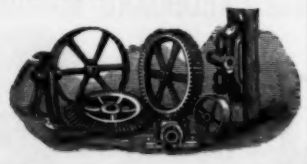
THE SUCCESS WATER WHEEL.

This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of

Heavy Gearing and Machinery

— FOR —

PAPER, COTTON AND GRIST MILLS.



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Leading Specialties: Turbines with Automatic Regulators, maintaining their Efficiency at Part Gate.

The Humphrey Turbine is the only wheel made that controls the *discharge*. It is the only Turbine that gives 90 per cent. of the full power of the water at *all* stages of the gate opening. Write for catalogues.

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ONE OR MORE SENT ON THIRTY DAYS' TRIAL.

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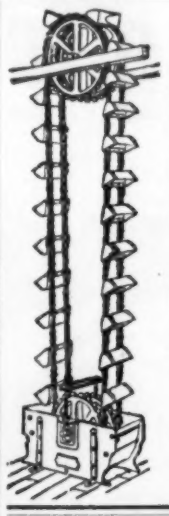

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Works at Ingelheim, Rheindürkheim, Gengenbach, Dohna, Koestitz (Tännicht), Alt-Oels, Sattler and Hirschberg,

RECOMMEND THEIR FIRST-CLASS

Bleached Straw Pulp.

Unequaled in Whiteness and Purity; Strong and Felty. Warranted free from clays and colors, and used by the leading Paper Mills in the States and in Europe. Also Special Lines of Bleached and Unbleached Sulphites.

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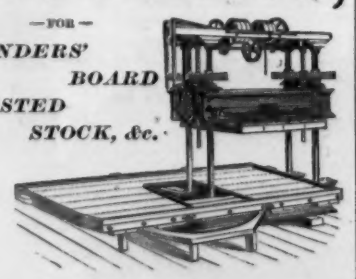

WILL do more and better work than any other press. Pressure is uniform and does not break the board. Has swinging platform, so one pile can be pressed while another is being prepared. Satisfaction guaranteed. Send for description and prices.

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ALUM

U. S. Refined Alum, Neutral,
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AGENTS: H. C. HULBERT & CO., NEW YORK.

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PAPER ULTRAMARINE,

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VENETIAN AND STRONG REDS

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Specialties for the Paper Trade: Fuchsine, Paper Blues, Green Crystals, Methylviolets, Paper Yellows, Croceine Scarlets, Paper Oranges, Eosine, &c.

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FERRIC CHEMICAL AND COLOR CO.,

— MANUFACTURERS OF —

Pillar Copperas, Venetian Red and Oxides of Iron,

WORCESTER, MASS.

(*Continued from page 900.*)

mate and monocalcium phosphate with sugar. This has a reducing action, under the influence of which the pigment is formed. There are some valuable colors among the less known compounds of this class, such as the chromium silicophosphates and their compounds with phosphates of alkaline earths. They are made by reducing mixtures of bichromate of potash, silicophosphoric acid and calcium or barium phosphites.

THE CHEMISTRY OF LEAD CHROMATES.

Normal lead chromate, obtained by precipitating lead acetate by potassium bichromate, has a brilliant sulphur-like yellow color, but cannot be used for ordinary coloring purposes, owing to the fact that very much washing is necessary to free the color from acid, which is inclined to alter the color to orange yellow, giving dirty shades on being diluted.

It is difficult to locate the precise cause of the change, which is, however, probably due to crystallization of the lead chromate. It is considered well to have, say, 5 per cent. excess of lead, the solutions as cold and dilute as possible, and to keep stirring all the time during and even after precipitation is completed. Yellow of similar chemical composition may have very different shades, according to how much lead is in excess during the precipitation—the more lead there is in excess the more brilliant the color generally turns out. If enough sodium carbonate is present to neutralize the most of the acid formed during the reaction the yellow so obtained will show much less inclination to change shade.

Chrome yellow for the production of chrome green, as made in America, has a peculiar shade which renders it unsalable for yellow coloring purposes; but it is better suited for mixing with prussian blues than any other chrome. The reason that it is not liable to change shade lies in the large excess of lead present during precipitation and also in the neutrality of the solutions. One part of crystallized tartaric acid is added to 10 parts of bichrome in concentrated solutions, causing a precipitation of a mixture of the normal salt with chromate of chromium.

To manufacture lemon chromes on the large scale of the formula $PbCrO_4$ with a large excess of lead in solution during precipitation is impossible owing to expense; hence they are generally made by the simultaneous action of chromates and sulphates on soluble lead salts. Of course the greater the proportion of sulphates used the paler will be the pigment obtained, the lead sulphate in the color being looked upon as an essential constituent and not as an adulterant.

Probably a distinct double compound is formed, as the colors of the various lemon chromes cannot be obtained by mixing the chromate and sulphate of lead, however intimately. Lemon chromes prepared by different processes vary much in (*a*) shade, (*b*) hardness and (*c*) covering power, as well as in other properties. In the following table five different mixings are given for such chromes running darker from 1 to 5; 1 yields a hard and brittle color, which becomes more spongy and softer until 5 is reached.

The first are best for lithography and the manufacture of stained and chromo papers, and the last are more suitable for grinding in oil:

	1.	2.	3.	4.	5.
Lead acetate.....	400	400	400	400	400
Bichrome.....	73.75	73.75	73.75	73.75	73.75
Sulphuric acid.....	49.00	....	....	....	....
Aluminium sulphate	....	166.5	....	166.5	....
Sodium.....	....	....	71.00	....	71.00
Sodium carbonate...	....	....	....	26.50	26.50

As will be noticed in the above formulæ, the diminishing acidity has a great deal to do with the matter mentioned above. If the acetate is replaced by nitrate the shades again become very different.

Free nitric acid causes the chrome to swell, so that for those purposes where this is esteemed a valuable property it is induced by adding to one of the wash waters enough nitric acid to make the water contain about 1½ per cent. of this acid. When soluble lead salts are used for yellows the shades are affected regularly by variations in the precipitants, but these variations become very complex and cannot be classed when insoluble compounds are substituted. In making chrome oranges the yellowness and redness of the shade depend solely on the alkalinity of the liquids.

If chrome yellow is treated with caustic or carbonated alkali it is turned into orange, which can be made as red as desired by using a more concentrated alkaline solution; but the absolute amount of alkali has no relation to the resulting color. The soluble lead salts may be replaced for chrome yellows by the cheaper insoluble compounds, such as white lead, basic chloride and specially prepared lead sulphate, as the ordinary commercial lead sulphate is too impure for color making.

In some cases the shade of the resulting chrome may be darkened by the use of a little soda in the wash waters.—*Condensed from Dingler's Polytechnische Journal.*

Obituary.

WILLIAM H. AMES.

William H. Ames, who was a member of the paper trade in the "sixties," died at his home in Collinsville, Conn., on October 2. He was born seventy-four years ago and was originally engaged in the hat manufacturing business, being a member of the firm of J. H. Prentice & Co., of Brooklyn, N. Y. He had retired from business, but when John B. Ayres in November, 1862, organized

WILLIAM H. AMES.

the firm of J. B. Ayres & Co. Mr. Ames became his partner, being the company of the firm. This house, as is well known, was the predecessor of the present firm of Conrow Brothers.

In July, 1865, Mr. Ames withdrew from the firm and became the senior partner of the firm of William H. Ames & Co., dealers in paper, who were located in Beekman street. In 1866 the firm retired from the field and Mr. Ames gave up active business. He was a genial, warm hearted man, of strong, sterling character, and was in all respects the sort of a man who drew people closely to him and won their esteem and respect. He leaves a son and daughter. The portrait from which the cut is made was taken about two years ago.

REV. JOEL SQUIER.

The Rev. Joel Squier died suddenly at his late residence, in Chatham Centre, N. Y., on Sunday, October 4, in the ninety-fourth year of his age.

The deceased was at one time president of the Troy Methodist Episcopal Conference. He was known as a brilliant and intelligent worker, and he continued his literary pursuits up to the time of his death. He was the father of the late E. George Squier, at one time United States Minister to Peru, and of Frank Squier, who is a partner in the firm of Perkins, Goodwin & Co., paper dealers, 66 Duane street, New York. The funeral services were held in Chatham Centre on the 7th inst., the interment taking place at Woodlawn Cemetery, New York.

Simon Bay, secretary of the *Globe* Printing Company, publisher of the *Globe-Democrat*, St. Louis, Mo., is dead.

Hervey McGill Watterson, father of Henry Watterson, editor of the Louisville *Courier-Journal*, died on Thursday night, October 1, at his son's home.

The Right Hon. William Henry Smith, of London, England, First Lord of the Treasury, Warden of the Cinque Ports and the British Government leader in the House of Commons, who had been ill for some time past, suddenly suffered a relapse and died on October 6. He was born in London, June 24, 1825, and was the son of William Henry Smith, bookseller, publisher and news agent, whose principal offices were in the Strand. He was educated at the grammar school at Tavistock, and on attaining his majority became a member and the managing partner of his father's firm. Here he developed the characteristics of patience, suavity, energy, perseverance and shrewdness to which his subsequent advancement in official life is to be attributed.

Leonard F. Lawrence died very suddenly of heart failure at his residence at Beachmont, Mass., on Thursday, October 4. Mr. Lawrence was for years a well-known representative man in the stationery and printing business, under the firm name of L. F. Lawrence & Co., doing business on Milk street, Boston. During the past few years, owing to ill health, he has been out of active business. His natural abilities were of a very high order, and, combined with a strong personal magnetism, drew around him a large and valued circle of friends. He was in his fiftieth year.

John H. Sawyer, a member of the firm of Sawyer & Sons, blank book manufacturers, New York, died at the Hotel Albion, Plainfield, N. J., on Monday, after a long illness. He went to Europe last May in search of health, but after six weeks he returned to Plainfield. His wife was with him when he died.

General Notes.

The Germania Publishing Company, New York, has been attached for $296.

J. W. D. McClure, stationer, &c., Pine Bluff, Ark., has been attached for $1,500.

The assignees of the Winona Paper Company, Holyoke, Mass., have received their money in full from Chemical Paper Company No. 2.

During the week or ten days succeeding October 12 the Crocker Manufacturing Company, Holyoke, will make cherry, tea and fawn colored papers, and orders should be sent in accordingly, especially in time for odd sizes.

An application was made on October 1 to Judge Pryor, in the Court of Common Pleas, by William J. Davis for a receiver of the assets of the Seeger & Guernsey Company, exporter and publisher, which has offices at No. 7 Bowling Green. Mr. Davis claims to have passed three years in compiling a Cyclopædia of the Manufactures and Products of the United States, and that he did the work under a contract with the Seeger & Guernsey Company, whereby it was to furnish the money necessary for the enterprise and pay him one-third of the net profits. The book was printed in both English and Spanish, being intended for circulation in Mexico and South America. Davis asserts that the profits of the first edition amounted to $87,000, and that on the eve of the issue of a second edition, whose profits will be $35,000, the company is trying to "freeze him out" by terminating the contract. The company, on the other hand, claims that Davis was employed only as an advertising solicitor and a canvasser, and in that capacity has no right to call for an accounting of the profits.

The J. B. Lippincott Company, Philadelphia, has published "A Handbook of Industrial Organic Chemistry," compiled by Samuel P. Sadtler, Ph. D. The work is adapted for manufacturers and all other persons who in any vocation now are or may hereafter become interested in utilizing organic materials in the industrial arts. The treatise is copiously illustrated, there being 127 engravings of mechanisms and detailed processes, besides fourteen diagrams, outline of products, qualitative tests and tables for the identification or detection of coal tar dyes and coloring matter upon fibres. Chapter VIII. is mainly a consideration of industries based upon the use of vegetable tissues. Rags, esparto, straw, jute, manilla, hemp, wood fibre and paper mulberry are respectively analyzed, and the methods and processes of handling such raw materials in paper making are concisely discussed.

When the Whiteman Pulp and Paper Company, Dansville, N. Y., began the erection of its new mill, after the fire, it had in view the production of straw fibre, with the intention of selling its entire output to other mills as a mixture in making papers of high grade. The experiments which were made had convinced the managers of the mill that this could be done. The processes which are employed in the manipulation of the straw, both mechanical and chemical, are largely original with this company and are used exclusively at its mill. One of the important results obtained is said to be the retention in the fibre of a natural sizing property which is not found in linen rags, and which, when compounded with them, gives advantageous and desirable results. Seen under a magnifying glass the fibre is extremely uniform and exceedingly white. It is much sought by manufacturers of writing and book papers, and to meet the demand created by its popularity and sale the company recently ordered another large globe rotary boiler to materially increase the production. Perkins, Goodwin & Co., New York, are sole selling agents for this fibre.

The famous pulp case between the Otis Falls Pulp Company and the Bowdoin Paper Company and Charles R. Milliken has been reached and the decision is filed with the clerk of courts, but no man knows its nature except the referees in the case. The only guide to its probable contents lies in the fact that the award under seal, which is not to be broken until the coming in of the Supreme Court in October, was sent to Judge Symonds, the leading counsel for the Otis Falls Pulp Company. It is the rule of the court in determining awards of this nature to send it to the attorney in whose favor the award is, and the conclusion is logically reached that the award, be it large or small, is in favor of the Otis Falls Pulp Company.

Chauncey Kilmer, the paper manufacturer, of Rock City Falls, N. Y., who owns a large amount of property at Saratoga Springs, will probably lock horns legally with Albert Spencer, the reputed millionaire owner and conductor of the Saratoga club house. Their lands adjoin. The trout pond in the club house grounds has been supplied by water from Mr. Kilmer's land. Mr. Kilmer proposed that Mr. Spencer should pay a nominal fee for the use of the privilege, so as, it is said, to protect Kilmer in the full possession of his lands, from which led pipes and gates connected with the pond. Getting no satisfactory response Mr. Kilmer has had the pipes and attachments cut out and removed.

In Town.

H. M. Whitney and S. P. Train, Boston, Mass.; J. N. Mohr, Philadelphia, Pa.; Charles Hanmer, Burnside, Conn.; Wellington Smith, Lee, Mass.; A. D. Remington, Watertown, N. Y.; William Whiting and E. C. Weiser, Holyoke, Mass.; L. Dilworth, Pittsburg, Pa.

Accidents.

One of the millwrights employed by the Chemical Paper Company, of Holyoke, Mass., was seriously injured on Sunday last by the overturning of a carriage near Ashley ponds. It was a bad case of runaway and broken head.

Burr Sanders, a twelve year old lad, was caught by a belt while playing in the mill of the Crosby Paper Company, Marion, Ind., on September 25 and seriously mangled. His right thigh was crushed, and there were severe abrasions of the body caused by the belt.

Walter Whittier was badly hurt recently at the No. 1 mill of the Winnipiseogee Paper Company, Franklin, N. H. He was running a truck used to carry the rolls of paper from the machine room to the shipping room. The roll of paper which he was carry-

FANCY, GLAZED AND COLORED PAPER.—Graduate chemist, having been active for many years as technical general superintendent in one of the leading factories of fancy paper in Europe, very familiar with all the details of this industry, especially with the production of color lakes, desires suitable position. Address T. S., care of Paper Trade Journal.

WANTED—A BOOKKEEPER; MUST BE NOT only thoroughly conversant with bookkeeping, but also fully informed regarding the details of paper manufacturing and the business generally; best of references respecting ability and integrity required. Address, stating salary expected, GILBERT PAPER CO., Menasha, Wis.

PAPER MILL FOR SALE—DOUBLE CYLINder machine; can be started at once; former owner dead. I. S. DILLINGHAM, 67 Federal street, Boston.

TISSUE PAPER MILL, WITH POWER, TO rent; splendid location, two 72 inch machines, Marshall driver, latest improvements, low freight to New York. O., Box 20, Camden, N. J.

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"CORLISS" ENGINE.
Embodying many marked
IMPROVEMENTS,
Resulting in the production of the
MOST EFFICIENT
And ECONOMICAL POWER in the World!

THE "FISHKILL CORLISS"
ENGINE
Has the indorsement of many of the leading Manufacturers and great Corporations of the United States, as well as high Testimonials from eminent Engineers.
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IS THE SIMPLEST, MOST ECONOMICAL AND MOST RELIABLE APPARATUS IN USE TO-DAY.

No Pumps! No Agitators! No Smell! No Repairing!

Over 20,000 Gallons of Strong Acid Produced Daily. Acid can be Regularly Produced of any Required Strength.

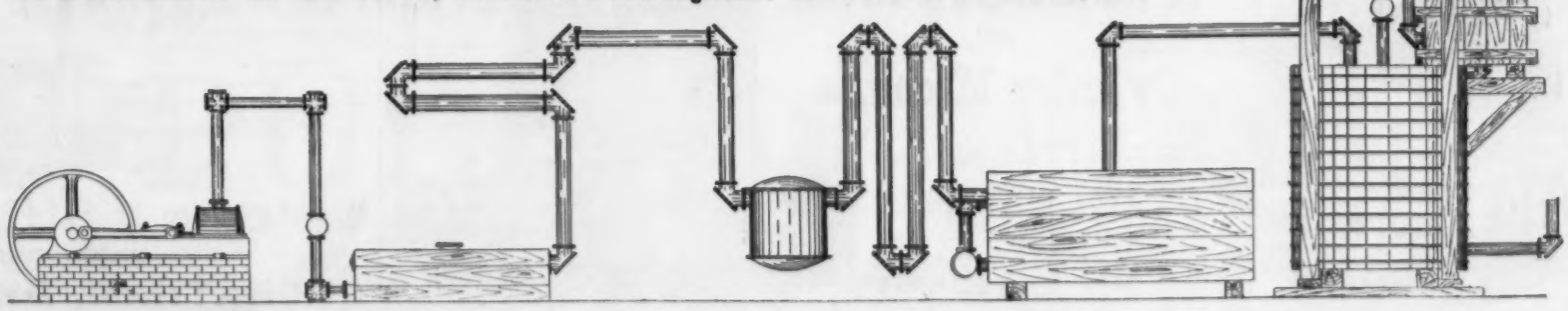
GREAT SAVING OF SULPHUR AND LIME.

Low Cost of Labor. Only One Man is Required to Run the Plant. No Expense for Repairs.

WE will guarantee the steady and economical production of acid of regular strength, suitable for any required sulphite process. **The Plant can be erected in mills now running,** without interfering with the daily production of the mills. We also build in connection with this Plant an apparatus to recover the sulphurous acid blown off from the digester, **thus saving 30 per cent. of the consumption of sulphur.** This new ACID PLANT **can be seen in daily operation** at the mills of the Remington Paper Co., Watertown, N. Y. One is in use in Europe and a third will be started this month at the mills of Louis Snider's Sons, Hamilton, Ohio.

We will furnish plans and superintend the construction and starting of paper, pulp and sulphite mills, and undertake any alterations, enlargement or repairs of mills now running. **Correspondence solicited.**

WENDLER & SPIRO, Chemical and Civil Engineers, **WATERTOWN, N. Y.**



ing weighed about 550 pounds. As he was about to trundle it over a threshold the truck tipped and the weight threw Mr. Whittier from his feet, and being partly prostrated he was struck on the shoulder by the roll of paper, which partially slid from its position on the truck.

THE FLENNIKEN
TURBINE WATER WHEEL

Is the most Simple, Strong, Durable and Economical Wheel manufactured.

We have recently taken out letters patent on an entirely new device for taking out all lost motion between gate stem and register in case, and is particularly adapted to using governors (see cut above).

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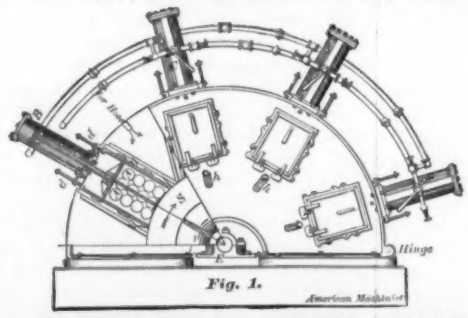

Fig. 1.

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TWO, THREE OR FOUR POCKET.
Improved Wet Machines, New Model Barkers, Knot Borers, Chippers, Splitters and all kinds of
MECHANICAL WOOD PULP MACHINERY.
Write for Estimates.
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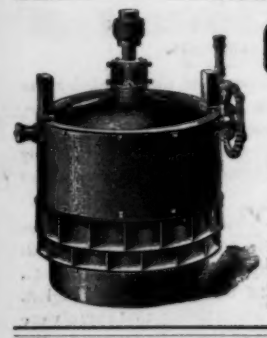
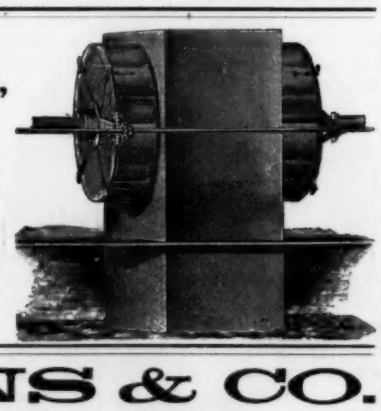
TRY THEM. THEY WILL PLEASE YOU.
Twelve page Circular and Price List on application.

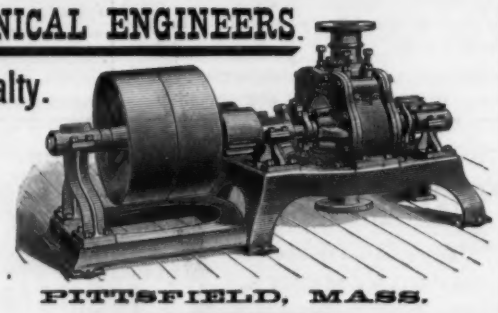
THE STEEL BELT FASTENER CO., 35 Atwater Building, CLEVELAND, OHIO.



Camden Water Wheel Works,
CAMDEN, N. Y.
ESTABLISHED 1850.
PERCIVAL & WOOD, Proprietors.
We manufacture a full line of the celebrated "Camden" Upright and Horizontal Wheels, adapted to any head of water. Our Horizontal Turbines are fitted with wood or iron draught box and tube. Every wheel guaranteed. Write for catalogues before ordering. We also make a full line of first-class Gearing and Machinery.

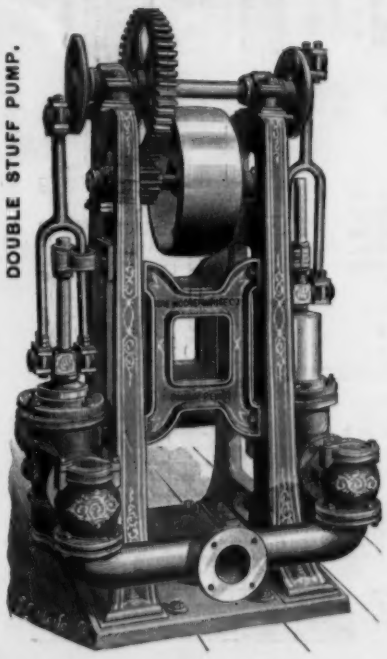


E. D. JONES, SONS & CO.
MILLWRIGHTS AND MECHANICAL ENGINEERS.
Paper Mill Plans a Specialty.



PITTSFIELD, MASS.
ALSO MANUFACTURERS OF
Improved Patent Rag Engines, Dusters, Elevators, Etc.
CROCKER'S
Rotary Pumps and Turbine Water Wheels.
VERTICAL AND HORIZONTAL ENGINES. SHAFTING, PULLEYS, HANGERS AND GEARING.

THE MOORE & WHITE CO.,
15th Street and Lehigh Avenue,
PHILADELPHIA,
Germantown Junction Station
Pennsylvania R.R.



Paper Machinery
FOURDRINIER
AND
Cylinder Machines,
FRICTION
CLUTCH
PULLEYS,
&c., &c.

BLEACHED
AMERICAN STRAW PULP.
Superior to any Foreign Make.
MILLS AT DANSVILLE, N. Y.
PUT UP DRY, IN SHEETS. Send for Samples and Quotations.
PERKINS, GOODWIN & CO., New York,
SOLE SELLING AGENTS.

Wood Pulp, Soda AND Sulphite,
IMPORTED BY
G. RAU, TIMES BUILDING, New York.
SOLE AGENT FOR THE U. S. AND CANADA:
ROZÈS AINÉ & FRÈRES, Agen,
Well-known Packers of Linens and Cottons.
RA TRADE MARK

THE WARREN FILTER.
Simple. Efficient. Economical.
FOR MANUFACTURERS DESIROUS OF IMPROVING THE QUALITY OF THEIR PRODUCT.
Roily or Discolored Water rendered Clear and Colorless.
IN USE IN THE LEADING PAPER AND PULP MILLS.
Plans, prices, &c., furnished on application.
CUMBERLAND MFG. CO., Boston, Mass.

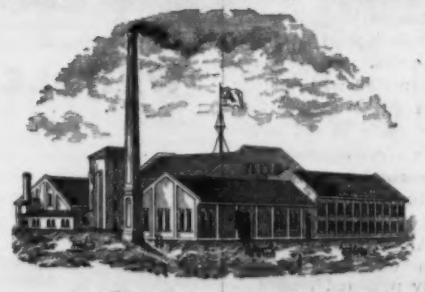
NORWEGIAN WOOD PULP CO., Ltd.,

IMPORTERS AND DEALERS IN
MECHANICAL, SULPHITE, SULPHATE AND SODA
WOOD PULP,
140 NASSAU ST., MORSE BUILDING,
Post Office Box 214,
NEW YORK.

JOHN L. TAYLOR, Room 80, Times Building, NEW YORK.
WOOD PULPS. SULPHITE, Soda and Mechanical.
RAGS. Linen and Cotton. Old and New, all grades.
JUTE STOCK. Dundee, Calcutta. English and German.
E. BUERGER.

J. & W. JOLLY, Manufacturers of
McCORMICK'S HOLYOKE TURBINES,
Paper Mill Machinery,
Allen's "Blue Spot" Preventative, Screens and Vats for Paper Machines.
RAG ENGINES AND JORDAN ENGINES MADE AND REFILLED.
Bleach Boilers, Fan Dusters, Ferry's Patent Star Dusters.
... PAPER CALENDER ROLLS MADE AND REPAIRED. ...
CHILLED ROLLS.
SHEET, SUPER AND WEB CALENDERS.
Suction Pumps, Stuff Pumps, Power Boiler Pumps, Suction Boxes and Plates, Pulleys, Shafting, Gearing, &c. HOLYOKE, MASS., U. S. A.

THE MARITIME SULPHITE FIBRE CO., LIMITED,
CORRESPONDENCE SOLICITED.



AGENT:
GEO. HAMILTON.
74 Wall St., New York.
Manufacturers of SULPHITE FIBRE,
RITTER-KELLNER PROCESS.
CHATHAM, NEW BRUNSWICK.

Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED OCTOBER 2, 1891.

An. Colors..	345	$23,384	Paper.....	477	$18,964
Alum	35	249	Steel Pens..	9	2,488
Alum's Cake	—	—	Stationery..	7	446
Bl. Powders	73	1,395	Slate Pencils	2	15
Soda Ash...	2,516	25,447	Clay	—	—
Soda, Caus..	1,165	18,510	Jute Butts ..	—	—
Soda, Sal....	330	1,038	P. Hangings	6	333
Ultramarine	180	2,460	Paper Stock.	2,324	21,654
Books	316	34,271	Terra Alba..	—	—
Newspapers	234	7,959	Waste.....	6	1,915
Engravings.	102	20,171	Wood Pulp..	2,902	7,532
Ink	191	2,495			
Lead Pencils	10	1,744	Totals....	11,263	192,470

Imports General Merchandise for the week ended October 2, 1891..... $6,388,741

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO OCTOBER 7, 1891.

Whence Imported.	*Rags.*	*Old Papers.*	*Chemical Fibre.*	*Ground Wood.*	*Manilla Stock.*
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria....	2,441	—	—	—	5
Amsterdam....	—	—	124	—	—
Antwerp.....*a*	4,501	158	1,022	21	3,858
Arendal.....	—	—	—	304	—
Aspinwall.....	877	75	—	—	26
Blaye	768	—	—	—	—
Bordeaux.....	1,751	31	—	—	—
Bremen.....*b*	3,267	98	—	—	3,832
Bristol.....	—	21	—	—	4,267
Calcutta	—	—	—	—	32,863
Catania.....	958	17	—	—	—
Cent. America	1,400	—	—	—	—
Christiania...	—	—	1,622	—	35
Copenhagen...	1,633	—	2,244	—	1,007
Dublin.....	—	147	—	—	—
Dundee.....	176	340	79	—	9,309
Genoa.....*c*	1,097	127	—	—	4,487
Gefle.....	—	—	570	—	—
Ghent.....	290	—	—	—	—
Glasgow.....	850	715	—	—	764
Gothenburg...	—	—	1,231	1,185	215
Greytown.....	32	—	—	—	—
Hamburg.....	2,861	393	988	—	2,296
Hamilton.....	—	—	—	—	30
Havana.....	—	—	—	—	5
Hiogo.....	14,027	—	—	—	—
Hull.....*d*	10,972	404	2,943	—	12,037
Havre.....	70	2	—	—	80
Leghorn.....	4,559	—	—	—	—
Leith.....	62	316	—	—	433
Liverpool....*e*	2,807	1,013	61	—	12,087
London.....*f*	6,244	3,556	332	—	4,450
Marseilles.....	2,336	—	—	—	127
Naples.....	14	—	—	—	—
Newcastle.....	128	—	—	—	4,099
Pillau.....	4,234	19	—	—	210
Rotterdam....	2,544	—	919	—	1,722
Stettin.....	12,250	—	1,724	139	1,834
Swansea.....	—	—	—	—	785
Yokohama...	6,270	—	—	—	—
Trieste.....	299	—	—	—	—

a. Including 560 bs. flax waste.
b. Including 136 bs. flax waste.
c. Including 861 bs. cotton waste.
d. Including 633 bs. flax waste.
e. Including 108 bs. cotton waste.
f. Including 9 bs. flax waste.

NEW YORK IMPORTS.

FROM SEPTEMBER 29 TO OCTOBER 7, 1891.

Paper Stock.

Lewy Brothers, De Ruyter, Antwerp, 174 bs. rags.
F. Salomon & Co., Gladiolus, Bremen, 130 bs. rags, 115 bs. bagging.
Oelrichs & Co., Eider, Bremen, 15 bs. manillas.
Oelrichs & Co., Kaiser Wilhelm II., Bremen, 15 bs. manillas.
Lewy Brothers, Island, Copenhagen, 197 bs. rags.
F. Salomon & Co., by same, 23 bs. rags.
F. Bertuch & Co., by same, 120 tons chemical fibre.
F. H. Wright, by same, 44 tons chemical fibre.
Ralli Brothers, Triscar, Calcutta, 361 bs. manillas.
Wing & Evans, Benzaloe, Calcutta, 536 bs. manillas.
T. K. Berlin, by same, 2,596 bs. manillas.
A. Wertheim & Co., Baltimore, Hamburg, 65 bs. rags.
G. Rau, Buffalo, Hull, 106 bs. rags.
J. Libmann & Co., by same, 24 bs. rags.
James Pirnie, by same, 192 bs. bagging.
Horace Dutton & Co., by same, 407 bs. manillas.
Sergeant Brothers, by same, 29 bs. manillas.
R. H. Overton & Son, by same, 223 bs. bagging.
A. Wertheim & Co., by same, 11 tons chemical fibre.
E. Hatton & Co., by same, 100 tons chemical fibre.
R. H. Overton & Son, St. Ronans, Liverpool, 125 bs. bagging.
James Pirnie, by same, 469 bs. bagging.
G. W. Millar & Co., by same, 111 bs. bagging.
W. A. Avis & Co., Tauric, Liverpool, 12 bs. rags.
Perkins, Goodwin & Co., France, London, 27 bs. papers.
John H. Lyon & Co., by same, 109 bs. bagging.
Leon Gottheil, by same, 107 bs. rags.
R. H. Overton & Son, America, London, 284 bs. bagging.
Darmstadt & Scott, Lydian Monarch, London, 43 bs. papers.
Atterbury Brothers, by same, 12 tons chemical fibre.
E. Hatton & Co., by same, 22 tons chemical fibre.
Burgass & Co., Britannia, Marseilles, 110 bs. manillas.
Atterbury Brothers, Zaandam, Rotterdam, 20 bs. rags.

Paper.

L. De Jonge & Co., Virginia, Hamburg, 31 cs.
C. E. & J. W. Brown, Majestic, Liverpool, 6 cs. hangings.
J. Campbell & Co., by same, 1 cs. hangings.
W. H. Schieffelin & Co., France, London, 1 cs.
A. M. Levy, by same, 5 cs.
Keuffel & Esser, Noordland, Antwerp, 1 cs.
Kupfer Brothers, by same, 4 cs.
L. C. Wagner, by same, 11 cs.
Metz & Meyer, by same, 1 cs.
E. Unger & Co., Zaandam, Rotterdam, 13 cs.
John Hunter, by same, 45 cs.
L. De Jonge & Co., Obdam, Rotterdam, 6 cs.
F. W. Devoe & Co., La Touraine, Havre, 3 cs.
May Brothers, by same, 7 cs.
H. Warwick, by same, 7 cs.
D. Appleton & Co , Aurania, Liverpool, 6 bs.
E. & H. T. Anthony & Co., Suevia, Hamburg, 1 cs.
Hermann Isaac, by same, 19 cs.

BOSTON IMPORTS.

FROM SEPTEMBER 30 TO OCTOBER 6, 1891, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Scythia, Liverpool, 5 bs. periodicals.
Gregory & Brown, by same, 1 cs. paper hangings.
F. H. Sander, Grassbrook, Hamburg, 53 pkgs. paper.
Marshall, Son & Co., by same, 7 cs. paper.
Louis Wolf & Co., by same, 16 cs. albums.

Paper Stock.

Train, Smith & Co., Nessmore, London, 107 bs. rags.
J. B. Moore & Co., by same, 138 bs. rags, 300 coils manillas.
C. A. Cheney, Grassbrook, Hamburg, 168 bs. rags.
C. A. Cheney, Kansas, Liverpool, 212 bs. rags, 111 bs. waste paper.
W. F. Corne, by same, 27 bs. waste paper.
True & McClelland, by same, 28 bs. waste paper.
Massasoit Paper Company, by same, 38 bs. rags.
J. B. Moore & Co , by same, 60 coils manillas.
Train, Smith & Co., Milanese, London, 213 bs. rags.
S. D. Warren & Co., by same, 61 bs. rags.
J. B. Moore & Co., by same, 173 coils manillas.
Perkins, Goodwin & Co., by same, 191 bs. waste paper.
C. P. Sumner, by same, 62 bs. waste paper.
T. F. Ring, by same, 139 bs. waste paper.
Order, Canada, by same, 62 bs. rags.
Train, Smith & Co., Durham City, London, 341 bs. rags.
S. D. Warren & Co., by same, 442 bs. rags.
Wheelwright Paper Company, by same, 137 bs. waste paper.
Crocker, Burbank & Co., by same, 158 bs. waste paper.
Darmstadt & Scott, by same, 56 bs. waste paper.
J. B. Moore & Co., by same, 34 bs. and 198 coils manillas.

Wood Pulp.

Gill & Lootz, Grasabrook, Hamburg, 288 bs.
W. A. Castle, Nessmore, London, 283 bs.

Bleaching Powder.

Warren & Co., Kansas, Liverpool, 543 cks.
J. L. & D. S. Riker, Scythia, Liverpool, 256 cks.

Caustic Soda.

Warren & Co., Kansas, Liverpool, 100 drums.

Soda Ash.

Warren & Co., Kansas, Liverpool, 108 cks.
J. L. & D. S. Riker, Scythia, Liverpool, 154 cks.
Linder & Meyer, by same, 420 bags.

Soda Crystals.

Warren & Co., Kansas, Liverpool, 280 bbls.

Sizing.

C. A. Cheney, Kansas, Liverpool, 703 bags.
Massasoit Paper Company, by same, 299 bags.
W. A. Castle, by same, 281 bags.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED OCTOBER 3, 1891.

Paper.

Drexel & Co., Maryland, London, 70 bs. sheathing.

Paper Stock.

Order, Belgenland, Antwerp, 564 bs. wood fibre.
Drexel & Co., Maryland, London, 70 bs. thread waste.
Brown Brothers & Co., by same, 183 bs. waste paper.

EXPORTS of Paper, &c., from New York for the Week Ended October 6, 1891.

BOOKS, cases, to Brazil, 30; to British Guiana, 1; to Berlin, 1; to British Australasia, 4; to British possessions in Africa, 8; to British West Indies, 11; to Cuba, 1; to Dutch West Indies, 2; to Havre, 4; to Hamburg, 1; to Japan, 5; to London, 29; to Liverpool, 10; to New Zealand, 1; to Newfoundland, 5; to Rotterdam, 2; to Stockholm, 2; to San Domingo, 5; to Leipsic, 1; to Venezuela, 2.

PAPER, to Brazil, 1 pkg.; to British Guiana, 26 cs.; to Berlin, 1 cs.; to British Australasia, 2 cs.; to Bremerhaven, 6 cs.; to British West Indies, 351 pkgs., 50 rms.; to Central America, 15 pkgs.; to Cuba, 1,668 pkgs.; to Dutch West Indies, 9 pkgs.; to Ecuador, 1 cs.; to Havre, 1 cs.; to Hayti, 6 pkgs.; to Hamburg, 4 cs.; to Japan, 1 cs.; to London, 153 cs., 12 pkgs.; to Newfoundland, 2 pkgs.; to Rotterdam, 10 cs.; to San Domingo, 50 pkgs.; to United States of Colombia, 61 cs.; to Venezuela, 18 pkgs.; to Liverpool, 4 cs.; to Mexico, 98 pkgs.; to Nova Scotia, 13 bdls.

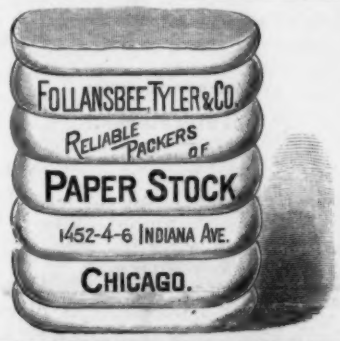
STATIONERY, cases, to Brazil, 24; to British Australasia, 1; to Bremen, 4; to British West Indies, 24 pkgs.; to Central America, 5 pkgs.; to Copenhagen, 1 cs.; to Cuba, 19; to Dutch West Indies, 8; to Ecuador, 10 pkgs.; to Hong Kong, 1; to Hayti, 3; to London, 73; to Liverpool, 36; to Newfoundland, 5; to Peru, 3; to Rotterdam, 3; to San Domingo, 1; to United States of Colombia, 5; to Venezuela, 11.

AGGREGATES AND VALUES.

Paper, reams.....	50	$13
Paper, pkgs	2,352	5,545
Paper, cases	270	3,290
Books, cases	112	7,310
Stationery, cases.....	232	30,501
Rosin, bbls.....	2,508	7,866
Totals.....	5,524	$54,534

Exports General Merchandise for the week ending October 2, 1891..... $9,768,989

JAS. KENYON & SON
Derby Street Mills,
BURY,
Lancashire, - - ENGLAND,
MANUFACTURERS OF
FELTS
— FOR —
PAPER MAKERS,
Couch Roll Covers, Wet and Dry Felts
— OF ALL KINDS. —
MAKERS OF THE NEW PATENT
COTTON DRYING FELT.
Agent in the United States:
S. G. TRAIN, BOSTON.



WOOLWORTH & GRAHAM,
COMMISSION
Paper Warehouse.
OFFICIAL EXPORT AGENTS
— FOR —
American Paper Manufacturers,
IMPORTERS OF
Paper Makers' Materials.
OFFICE, 440 Pearl St. | WAREHOUSE, 38 Rose St.,
NEW YORK.

WILL. MUNDS, DRESDEN, GERMANY,
Sulphite Cellulose Expert.
15 FACTORIES REPRESENTED.
SULPHITE, SULPHATE and SODA PULPS,
BLEACHED and UNBLEACHED, supplied in all qualities and to all process.
SPECIALTY:
The STRONGEST FIBRED Qualities
(Mitscherlich Process).
STRAW PULP—First-Class Bleached.
New Works built and started. Four have already been superintended.
Plans and Estimates Furnished.

TRAIN, SMITH & CO.,
IMPORTERS OF AND DEALERS IN
—ALL DESCRIPTIONS OF—
Paper Makers' Supplies,
24 FEDERAL STREET, BOSTON.
BRANCH OFFICES: 36 BEEKMAN STREET, NEW YORK. 21 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO.,
Successors to BARLOW & CO.,
WHOLESALE DEALERS IN AND PACKERS OF
Woolen Rags and Paper Makers' Supplies,
237 and 239 SOUTH STREET, and 66 and 68 UTICA STREET,
THE OLD STAND, BOSTON, MASS.
WOOLEN RAGS GRADED IN COLORS AND QUALITY.

ESTABLISHED 1855.
DARMSTADT & SCOTT,
— IMPORTERS AND PACKERS OF —
PAPER STOCK.
Offices: 21 and 23 Centre Street; Packing House: 312 Water Street, New York.
☞ SPECIAL ATTENTION CALLED TO OUR OWN PACKING.

F. BREDT & CO.,
No. 194 Fulton Street, SOLE AGENTS FOR New York City, U. S. A.
JOSEPH PORRITT & SONS'
TRADE MARK. ENGLISH FELTINGS.
ALSO IMPORTERS AND DEALERS IN
MARINE BLUE (Aniline) for Newspaper Mills,
Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue.

W. A. CASTLE,
SPRINGFIELD, MASS.,
IMPORTER OF
FINE GRADES LINEN AND COTTON RAGS.
All Grades of Sizing.
Waldhof Bleached Sulphite Pulp.

GRIFFIN & LITTLE, PAPER MILL CHEMISTS,
Office and Laboratory: 103 Milk Street, Boston.
EXPERTS IN THE SULPHITE PROCESS AND ALL CHEMICAL MATTERS PERTAINING TO THE MANUFACTURE OF PULP AND PAPER.

LUDLOW MANUFACTURING CO.,
SALESROOOMS, 133 ESSEX STREET, BOSTON.
TWINES
Paper Makers' Twines a Specialty.
ASK FOR SAMPLES AND QUOTATIONS.

WALDHOF SULPHITE PULP
STRONG! PURE! FELTY!
OF ALWAYS EVEN QUALITY.
SOLD BY
LEON GOTTHEIL
SOLE AGENT FOR THE UNITED STATES,
No. 140 NASSAU STREET, NEW YORK.

WOOD PULP—CHEMICAL AND MECHANICAL,
IMPORTED BY
A. WERTHEIM & CO., "Times" Building, NEW YORK.

The Paper Trade Journal.

DEVOTED EXCLUSIVELY TO THE INTERESTS OF

The American Paper Trade.

Weekly, $4.00 per Annum.

Single Copies, · · · 10 Cents

HOWARD LOCKWOOD & CO.,
Publishers.

HOWARD LOCKWOOD. WILLIAM P. HAMILTON.

NEW YORK: SATURDAY, OCTOBER 10, 1891.

THE JOURNAL contains the latest and fullest information relative to the paper trade in all parts of the world, including descriptions of new appliances and processes for making paper, experiments with new fibres and other materials, a record of the water supply, with the latest manufacturing news in all parts of the country. It gives the cream of all the foreign technical journals which relate to the paper interest, besides communications from competent persons in the trade, both at home and abroad. The market review and quotations show the state of trade in all the principal cities, and no pains have been spared to make these accurate and complete.

Advertisements cannot be received for insertion in the current week later than 9 A. M. on Friday. The charge for advertising is 25 cents a line, each insertion. The rates for standing and displayed advertisements to be had on application. Card in Directory Column and one copy of paper, $15 a year.

Subscription per annum and postage for Great Britain..... £1
Subscription and postage for France, per annum..... 25 francs
Subscription and postage for Germany per annum..... 24 reichsmark

Foreign subscribers may address our New York office.

Payment for subscriptions or advertising may be made by express money order, draft, post office order or registered letter.

All communications must be addressed to

HOWARD LOCKWOOD & CO.,
Publishers,
126 and 128 Duane Street, N. Y.

Telephone No. 1994, Cortlandt.

CABLE ADDRESS: Catchow, New York.

BRANCH OFFICES.

Western Office—FREDERICK E. LYSTER, General Manager, 114 LA SALLE ST., CHICAGO, ILL.

Boston Office—A. L. DELESDERNIER, General Manager, 67 FEDERAL STREET, BOSTON, MASS.

LOCKWOOD PRESS PUBLICATIONS:

		PER YEAR.
Paper Trade Journal,	Every Saturday,	**$4.00**
American Stationer,	" Thursday,	**2.00**
American Bookmaker,	Monthly,	**2.00**
American Mail and Export Journal,	Monthly,	**3.00**
Lockwood's Directory of the Paper and Stationery Trades,	Annually,	**2.00**

All Pioneer Publications.

HOWARD LOCKWOOD & CO.,
126 & 128 DUANE ST., NEW YORK.

THE device illustrated and described on the first page of this issue of THE JOURNAL is intended to facilitate and simplify the work of marking or grooving paper or pulp board employed for making paper boxes or for other uses. It appears to be a facile and convenient device for the purpose mentioned.

THE resources of America seem to have no end. A remarkable fibrous mineral deposit is reported to have been discovered in South America, and this is said to furnish a good material to be worked up into paper. A brief note on this discovery will be found on the first page of this issue of THE JOURNAL.

REPORTS of failing water power come from all sides, and the shutting down of the mills at various points is causing considerable inconvenience. Manufacturers, perhaps, ought not to complain as much as their employees; but it is certainly inconvenient for many to be called upon to run on short time. There is reasonable hope, however, that the needed rains will not be long delayed.

THE interests of the paper manufacturers of this country are not to remain unrepresented in laying out future reciprocity treaties. The Manufacturers' Association has an earnest and stirring representative at Washington, and we cannot doubt that he will present the claims of the industry with sufficient force to compel recognition.

AN interesting and at the same time valuable review of the conditions under which it is desirable to manufacture paper for wrapping silverware and steel goods will be found in this issue. We fully agree with the writer of the article that there is absurdity in the custom which insists that bleached or white tissues are desirable for such uses. There is no reason why foreign papers for wrapping silver or steel should be sold in this country, except that custom has made a rule which is as unnecessary as it is unwise. Paper makers who are interested in this line of production would do well to communicate the views of our contributor—a chemist and paper maker of European experience—to the manufacturers of silver and steel goods.

A USEFUL as well as interesting publication issued under the direction of the State Department has been received. This is a handbook on Brazil, and it will be of service to all who desire to enter into trade relations with the people of that country. It contains the Brazilian tariff and also statistics of trade. The means of internal and external communication are elaborated in a manner convenient for ready reference, and for the service of foreigners there is prepared a travelers' and shippers' guide, which affords full information of the steamship and railway lines in operation. A chapter is devoted to the commercial methods in use, which is followed by the full text of the recent reciprocal arrangements, with a statement of their effects upon the importation of various American products. The value of this handbook will be readily understood. We trust that it will be followed at an early day by similar publications setting forth information relating to other countries.

IN an interesting report as to the probable co-operation of American nations in the world's fair at Chicago in 1893, it is stated that, so far, sixteen of the eighteen American republics have agreed to participate in the exposition with a view to make it a success. All of the colonies have also expressed a similar intention. Bolivia and Paraguay, being more distant than the other countries, have not yet been heard from, but there is no doubt of their willingness to join in the forthcoming celebration. All of these countries have also appointed commissioners to take charge of and represent their interests, and the agricultural, industrial and manufacturing interests have shown very cordial readiness to send exhibits of their skill and products. Each of these nations has also backed its faith in the fair by making liberal appropriations, and ten of them have signified their intention of erecting their own buildings for the care and display of their exhibits. Many new features are to be introduced which will be as novel as they are interesting, and these will include actual representations of the life and occupations of the native inhabitants of countries not often visited. Other picturesque attractions are to be offered which previous expositions have not attempted to provide. The paper trade has already, through the recent meeting of the association at Saratoga, shown a disposition to take advantage of any future reciprocity treaties which the United States may enter into with other nations, and it is none too early for the trade to begin the preparatory work of representation at the great exhibition and for determining upon the best possible methods of placing before visitors from all parts of the world all that is best in American paper manufacture. That some of the improvements in our paper mills will interest European and other visitors no one can for a moment doubt.

THE CHEMICAL FIBRE INDUSTRY.

Great progress has of late years been made in the development of the chemical fibre industry in the United States, the last decade having shown what in other countries would be regarded as phenomenal growth. But in America action is generally quick and decisive, and as a natural consequence a branch of manufacture so important could not but be taken up and carried forward with vigor. Since 1881 the daily capacity of American mills manufacturing chemical fibre—by which we mean the product of wood reduced by the well-known chemical agencies—has increased about 495 per cent. During the year ended June 30, 1891, the gain in production was almost 39 per cent. (38 9-11), as the appended tabulation will show:

DAILY CAPACITY OF CHEMICAL FIBRE MILLS IN THE UNITED STATES.

States.	1890.	1891.
Connecticut.....pounds.	4,500	4,500
Delaware.....	42,000	42,000
Indiana.....	40,000	50,000
Maine.....	255,000	444,000
Maryland.....	46,000	66,000
Massachusetts.....	45,000	45,000
Michigan.....	78,000	78,000
New Hampshire.....	80,000	80,000
New Jersey.....	4,000	4,000
New York.....	184,000	234,000
Ohio.....	40,000	63,000
Oregon.....	20,000	20,000
Pennsylvania.....	168,000	198,000
South Carolina.....	....	10,000
Vermont.....	....	24,000
West Virginia.....	50,000	50,000
Wisconsin.....	55,000	131,000
Totals.....	1,111,500	1,543,500

The great increase in Maine will be noted. New York and Pennsylvania have notably increased their products, and two States—South Carolina and Vermont—not previously engaged in the manufacture have taken it up. Assuming that the production is well up with the capacity, as indeed it is, we find that the probable output of the chemical fibre mills—distinctively reported—during the year last ended was 231,524 tons, a very important item in the consideration of paper making supplies when all other sources of paper making material are taken into account. We have spoken of the output distinctively reported. By this we mean the product of mills making chemical fibre exclusively, for a considerable quantity besides is made by various paper mills for their own use, and therefore not being included in this separate recapitulation does not represent the entire production. We doubt if any other country can show such an expansion in this department of industrial production.

Watermarks.

BY DANDY.

Considerable political stir is noticeable, and paper is in demand. Between demand and short water the paper maker ought to "keep a stiff upper lip."

There were 1,899 packages of machinery, valued in the aggregate at $60,000, shipped to Cuba this week from New York. This shipment may or may not include paper mill machinery, but as showing what our manufacturers are doing in near by markets it certainly claims special notice.

New industries are breaking out in various places, "like the smallpox." This is "all along" of the tariff. There is a story told of the owner of the largest tannery in Great Britain, who is about to put up a tannery in this country. He didn't like the idea of having to come over here to hold his trade, and said that the worst part of the business was that he found he would be forced to employ American workmen, because the contract labor law would not permit him to bring his own experienced men from Scotland.

Next he said that there was no way for him to get around building the factory in America, for he could not possibly pay the duties and sell his goods here in competition with goods made in the United States. Now, I have always heard it alleged by the tariff for revenue fellows that the consumer paid the duties. This only goes to show that the t. f. r. fellows are "'way off."

Another man, a lace manufacturer at Nottingham, England, has come over here to start a factory for making laces. He found that he had to do it, as he was otherwise "not in it."

Again, a number of Belgian manufacturers of woolen yarn have arranged to start factories in this country, and a Boston concern, formerly importing worsted goods, has determined to make the goods at Lowell, Mass. Are not these signs of the times?

A good story comes from Holyoke, and the point of it bears rather hard on a present high official of the commonwealth of Massachusetts. It is reported that the said official made a few remarks on a recent occasion, in which he told how his party in its national work was going to take the duty off rags and reduce it on paper and on the materials for building mills.

The remarks were listened to by a "canny" Scot, who is the superintendent and shareholder of a large mill and who heretofore has cast his vote for the said official's party. Talking with him afterward as to the matter he announced his intention of hereafter voting the other way. "And why?" asked the official.

"Well," said the Scotchman, "you said you were going to remove the duty on rags. Now, there is no duty on rags. This shows that you did not know what you were talking about. Then you said that you were going to reduce the duty on paper, which would compel us to close our mill."

The politician, by his talk, did some missionary work, but converted the man the wrong way.

One sees some funny things in the papers nowadays. How is this for an advertisement in an English publication: "A young gentleman, on the point of getting married, is desirous of meeting a man of experience who will dissuade him from the step."

Expert testimony is not always reliable. For instance, they tell of a young man who set up as an expert in paper, and after saying that he knew the business from A to Z, and had served in the rag room, proceeded to tell the constituent materials in a sheet of paper which was handed to him. His story sounded well until the manufacturer of the sheet was called to the stand, and testified as to the stock in the paper, none of which had been mentioned by the young man, who in fact had not named an article which was in the sheet. That young man may possibly know more when he grows older.

Low water is the cry from all quarters, and the "oldest inhabitant" in many places is now getting in his fine work telling how many years ago it was when the streams were so dry. If the "oldest inhabitant" would only follow the example set by the streams at present he would be a real comfort.

A paper dealer in this city was surprised to see his name, or at least one similar to it in every respect, printed in a paper with "Rev." before it. All I want to say is that if the young man has taken "orders" it is more than he did when he was a plain "steward."

The same peculiarity in similarity of names likewise appears in another quarter, where the name owned by a New York paper dealer is printed as that of an elder in a Brooklyn church, and anyone reading the account would suppose that matrimonial honors had been followed by promotion in the church.

The figures on jute butts are still interesting. The present visible supply is 86,000 bales as against 202,000 last year, and 152,000 the year before.

There has been a failure in the jute butt line in Calcutta. I do not mean a failure in the crop, but of a dealer who sold "short," and as the market went against him he had to collapse.

Communications.

Paper Mill Wanted.

1616 TROOST AVENUE,
KANSAS CITY, MO., October 4, 1891.

Editor of The Journal:

Do you know of anyone having a good paper mill to make book and news who would like to move the machinery out as far West as Kansas City, or who would sell such machinery cheap? If you can put me in communication with anyone I will be under obligations to you.

B. F. RANDOLPH.

"Mill Ideas."

NORWICH, Conn., September 30, 1891.

Editor of The Journal:

The statement of one of your contributors in a previous issue in regard to the method employed by finishers in marking or stenciling their wrappers leads me to wonder why some of the mill men other than the millwrights don't come out in print and discuss the various ways of doing the same thing, or propound some question in which they are interested, and which may be troubling or fretting them at times. No doubt the method employed by one might just exactly suit the circumstances of the other, and vice versa, and the exchange of ideas would thus be mutually beneficial.

In regard to stenciling and rubber stamps the laborious and slow method of making them, as suggested by Mr. Hobart, is hardly practicable where there is a great variety of stamps needed and the sizes and weights of the different orders are almost innumerable.

I found myself confronted with the same trouble in regard to stencils wearing out. There were a few brass ones, but the bulk of them were made of wrapping paper and were sticky, soggy and nearly closed up by reason of the ink penetrating the fibre and sticking on the edges of the letters. I found some light wrappers, tough and of a smooth surface, and cut them into sheets of the average size of the stamps and then gave each two coats of shellac, after which I let them harden by exposure to the air for a few days. Then with a circular stencil containing the alphabet and numerals I stenciled the hardened wrapper and cut out the letters with a sharp knife, securing a good, clean, serviceable stamp, which lasts for years and does good work. I have often cut a large stencil in half an hour, and in no other way can such a stencil be made so cheaply and well.

I do not think that the stamp which Mr. Hobart suggests would do any faster work than such a stencil or do it any better. The stamp would have to be inked for every wrapper, whereas a brushful in stenciling should mark a dozen or more. FINISHER.

Trade Talks.

J. G. Miller, secretary, De Witt Wire Cloth Company—You ask what struck me most during my recent trip East? Well, I found that a very good feeling prevailed everywhere, and that the business of the fall had set in in earnest with most encouraging prospects. Some of the mills were a little troubled on account of scarcity of water, and it occurred to me that if the equinoctial storm would show itself and shed very copious tears it would not be objected to on the part of the mills. The Kennebec River is very low, but still I heard no particular growling. All through the East the business tone is good, and as the crops are excellent and there is a good export demand springing up and nothing to hinder an excellent fall and spring business, it is pleasurable to note the effect these things have upon trade generally.

Wellington Smith, Smith Paper Company, Lee, Mass.—The water at Lee is very low; in fact it is much lower than I have seen it for thirty years. With low water, high prices for jute and bleaching powder, I do not see how paper can be prevented from going up in price.

George A. Mather, of Peter R. McQuie & Son, Liverpool, England—I came over on the City of Berlin, and will remain here for several weeks. Yes, of course, the alkali union is a very live topic on the other side, and the feeling there is bitter and strong. It is more bitter and stronger than it is here, where I find people either do not take as much interest in the matter or else do not realize the position of affairs as well as the people on the other side. The paper makers of Great Britain are considerably agitated over the question. As to whether the movement to build outside works will be carried out I do not know. One factory I believe has been started, and others are talked of; but you know it is quite an undertaking to put up chemical works, and there are very many points to be considered. We were the largest shippers of bleaching powder, but the American trade has not shown any growth. Mills here which formerly used large quantities of it have given it up, and the consumption of bleaching powder, instead of keeping pace with the extension of the trades where it is used, has stood still, if it has not actually decreased. This is a fact which I do not think the union has fully realized or appreciated. The climate of England is probably the best in the world for the production of heavy chemicals, for while you have the raw materials in the United States, your climate is much hotter than ours. Yes, a United States agent has been appointed for the bleaching powder product of the union, but I do not believe that similar agents will be appointed for the other products. The fact is, the union does not appear to have any settled or definite policy. It has wavered on many subjects, being blown one way by one wind and the other by the next wind from another quarter.

A. Christie, of James R. Crompton, Bury, England—Business with us has been and is very good. Yes, the McKinley law has affected us. It has increased the demand for our high-class tissues and lessened it on the lower grades, very much to our satisfaction. We have sold much more goods to America since the bill went in force than we did before, so that we have nothing to complain of.

Dr. Max Baum, of the Zellstofffabrik, Waldhof, Germany—The pulp business with us is very good indeed, and our sales in America are constantly increasing, notwithstanding the building of American sulphite mills. Fibre is going to rule higher in price owing to the increased cost of wood and the increased cost of other raw materials. The business, too, is going to be done in a different way. The fibre makers of Germany, Austria, Norway and Sweden are forming a combination which will unite all mills, and which, if successful, will begin business on January 1. This combination will not control prices. Every maker will

fix his own price, but the entire product will be sold through the combination headquarters, which will be located at Frankfort. No, there will be no agency of the combination here. Every importer can purchase as heretofore, but all business will have to be done through the Frankfort office. I am waiting and expect to hear almost any day of the successful formation of the new company. The Waldhof works last year enlarged their plant, adding a new department to make one special grade of fibre. To show the extent of the works I may state that that company has twenty men whose sole business is to buy wood. Eighteen of them are actual buyers and the other two are in charge of the department.

Changes, Removals and New Firms.

G. L. Rice, stationer, West Superior, Wis., has sold out.

Lang & Gaines, printers, Hartford, Conn., have dissolved partnership.

James Tufts, publisher of the *Republican*, Auburn, Cal., has sold out.

H. E. Ankeney, bookseller and stationer, Des Moines, Ia., has sold out.

A. H. Edsten, bookseller and stationer, Minneapolis, Minn., has sold out.

U. S. Mudge, stationer, Binghamton, N. Y., has sold out to Fred. H. Rogers.

W. T. Craycroft, publisher of the *Southwest Missouri*, Lamar, Mo., has sold out.

Bateman & Clark, publishers, Ida Grove, Ia., have been succeeded by John L. Clark.

George F. Palmer has started a stationery and news store in South San Francisco, Cal.

George T. Williams, publisher, Ida Grove, Ia., has been succeeded by F. F. Kiner & Sons.

Lipsky & Pickleman, dealers in paper stock, Montreal, Que., have dissolved partnership.

R. L. Durant & Co., stationers and newsdealers, Seattle, Wash., are advertising to sell out.

Axley & Hall, booksellers and stationers, Chattanooga, Tenn., have dissolved partnership.

Speed & Mitchell, publishers of the *Southwest Mail*, Nevada, Mo., have dissolved partnership.

Eugene Day, publisher, Santa Monica, Cal., has been succeeded by Fisher & Hemingway.

Evans & Foster (Fifth Avenue Printing Company), printers, Pittsburg, Pa., have dissolved partnership.

Whitcomb & Persinger, publishers, Des Moines, Ia., have been incorporated as the *Mail and Times* Publishing Company.

B. P. Sullivan, stationer and printer, New Orleans, La., has removed from 45 Baronne street to 58 Baronne street, near Gravier street.

The Acme Steam Printing Company, not incorporated, Ogden, Utah, has been succeeded by the Acme Printing Company, incorporated.

Charles Meisterhaus and others, of Dallas, Tex., have incorporated the German Printing and Publishing Company, with a capital stock of $5,000.

George W. Wright, stationer, &c., San Francisco, Cal., has sold his store at 519 Montgomery avenue in that city, and has bought the property and business at 211 Eighteenth street.

The *Star-Tribune* Company, of Charleston, W. Va., has been incorporated by M. R. and R. A. Reber, A. H. Mahone and others to consolidate and publish the *Star* and the *Tribune*. The capital stock authorized is $25,000.

The Acme Stationery and Paper Company, New York, announces that the Woronoco Manufacturing Company, of Fairfield, Mass., has been consolidated with it, and that C. T. Askew, of the latter company, has been admitted to the former company.

The *Art in Advertising* Company, of New York, has been incorporated to publish and circulate an illustrated journal or magazine under the title of *Art in Advertising*. Capital, $2,000; directors, Henry C. Brown, Elizabeth L. Sylvester, Nellie De Graff Doubleday, Herbert Plimpton and Duncan Edwards.

The Chicago *Daily Press* has completed its business organization. Robert Laidblom is president of the company, and Max Polachek general manager and treasurer. The entire capital stock, $100,000, has been subscribed and allotted. The first issue of the paper will appear on October 18, and thereafter every evening and Sunday morning.

Failures.

Chatfield Brothers, paper hangers and decorators, No. 874 Eighth avenue, New York, have made an assignment to Peter Wagner.

The Charleston *Daily World, Weekly World* and *Sunday Budget*, published by the *World-Budget* Company, Charleston, S. C., have suspended publication. The announcement was made October 7. The *World* was started four years ago.

Judge W. S. Shurtleff presided at the Probate and Insolvency Court at Pittsfield, Mass., October 7. C. W. Williams, of New York, attorney for L. L. Brown, appeared for the Freeman Manufacturing Company, the L. L. Brown Paper Company and L. L. Brown, and asked a further continuance for all these concerns until November 5. He stated that he had hoped to report the affairs of the Freeman Company as settled at this court. But a small amount of claims still remain to be adjudicated upon, great progress having been made in arranging the affairs of the company for the best interests of all the creditors. The creditors of the paper mill company were having their interests protected by the running of the paper mill with their consent, and nothing was being lost to them or would be lost by this additional delay, which would subserve the interests of all creditors concerned. John C. Crosby appeared for the petitioning creditors, who have not come into the Windsor compromise arrangement, who were willing, he said, with their $10,000 of claims, to give the Freeman Company the extension of time asked for. He also appeared at this hearing for President Benner, of the International Trust Company, of New York, whose claim amounts to $15,000 and whose petition is filed as in aid of the other insolvency petitions. It is stated that any rumor of an effort to throw the Freeman Company into insolvency by persons who might wish to buy the works at a low figure at a forced sale has no foundation in fact. The true state of things seems to be evident in the rumor creditors representing $25,000 or thereabouts in claims have as yet not come into the Windsor compromise arrangement, hoping that by staying out that they may make better terms than yet proposed by the new company which has been formed to carry on these works when this amount of indebtedness is disposed of. This amount is now the only thing in the way of resumption of business at this plant. The acquiescence of President Benner to a postponement to November 5 was made on the understanding that this should be the final adjournment of the Freeman case, and under these conditions it was granted by the court.

Fires.

F. B. King, dealer in paper hangings, Albany, N. Y., has been damaged by water. Insured.

E. J. Totams, manufacturer of paper boxes, Danbury, Conn., has been damaged by fire. Insured.

Fire broke out in the sulphur room of the Falls Manufacturing Company's sulphite fibre mill, Oconto Falls, Wis., at 1 o'clock on the morning of September 26, wrecking the sulphur and acid rooms, and causing a damage of over $1,000.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; and Real, a mortgage on real estate.]

MIDDLE STATES.

Mortgagor.	*Amount.*
F. H. Whipple & Co., New York, N. Y.	$3,948
Adam Elsaesser, Buffalo, N. Y.	1,760
Myers & Mitchell, Rochester, N. Y.	10,000

WESTERN STATES.

Gus. L. Bergstrom, Chicago, Ill.	200
Rice Brothers, Fort Scott, Kan.	10,379
Southwestern Publishing Company, Fort Scott, Kan.	10,379
H. M. Crane, Bloomington, Neb.	468
— Callahan (Callahan & Barr), Omaha, Neb.	1,220
Henry T. Hudson, Portland, Ore. (Real).	1,500
F. L. Allen, Olympia, Wash.	900
Johnson-White Printing Company, Chicago, Ill.	2,900
L. J. Hagel, Peoria, Ill. (B. S.).	1,400

SOUTHERN STATES.

Standard Publishing Company, Jacksonville, Fla.	0

CANADA.

J. D. Taylor, Ottawa, Ont.	250

LIENS RELEASED.

W. S. Berkey, Mount Ayr, Ia.	612
George Setzler, El Dorado, Kan.	996

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL,
FRIDAY, October 9, 1891.

THE MONEY MARKET.—The stock market is dull and most of the moving shares closed at lower figures. The loan market was dull and steady, call loans on stock collateral ruling at 4½@5 per cent. Time loans continue on a 6 per cent. basis, and commercial paper is quoted as follows:

	Sixty days.	Four months.
Double named—		
First class	6 @ 7	6 @ 7
Good	7 @ 8	7 @ 8
Single named—		
First class	6½@ 7½	6½@ 7½
Good	7½@ 8½	7½@ 8½
Not so well known	9 @12	9 @12

The market for sterling was very quiet. Posted rates closed at $4.80½ for sixty days' and $4.84 for demand. Rates for actual business were as follows: Sixty days' sight, $4.79½ @ 4.79¾; demand, $4.83 @ 4.83¼; cables, $4.83¾@4.84; commercial, $4.78½. Continental bills were quoted as follows: Francs, 5.26¼@5.25⅝ and 5.23⅛; reichsmarks, 94⅜@94⅛ and 95@95⅛; guilders, 39⅞ and 40⅛. Government bonds were steady but quiet.

THE PAPER TRADE.—The low condition of the watercourses, which was noted in last week's JOURNAL, continues and is presenting a serious question to paper manufacturers. The trouble is not local, but is reported from all quarters East and West. Some mills are shut down entirely, and others are making only half time, while at Holyoke the water was out of the canals entirely from Wednesday midnight to Thursday noon, when the mills started up again, the Water Company, however, keeping its restrictions in force. This, of course, has curtailed the product, and even now the full capacity is not being made, and there is some trouble experienced in getting orders filled promptly. The demand for goods has freshened up somewhat and there is a fair volume of business in all lines. Jute stocks continue to rule high, and the question of a supply in this direction at reasonable prices is giving makers of Manilla paper something to think about. Prices, however, have not yet advanced, but some makers are making efforts to push them up. Straw Wrapping figures are strong, owing to a steady demand, which keeps supplies well cleaned up.

JUTE BUTTS.—The market for Jute Butts is strong, and 1⅝c. is the quotation both here and at Calcutta, with 1¾c. asked on spot by one seller from small buyer. Sales are light, but several small lots have been moved at 1⅝c. The Tuskar arrived this week with 6,200 bs., nearly all of which go direct to consumers. The statistical position, as given by the October circular of Cabot, Ray & Co., is as follows: "Imported to the United States, 1888, 457,884 bs.; 1889, 412,689 bs.; 1890, 481,071 bs. Consumed in the United States, 1888, 389,684 bs.; 1889, 417 889 bs.; 1890, 496,994 bs. Stock on hand, New York and Boston, January 1, 1891, 50,250 bs. Imported, New York and Boston, since January 1, 1891, 528,406 bs.; 1890, 426,127 bs.; 1889, 375,249 bs. Stock, New York and Boston, October 1, 1891, including 3,000 bs. paper stock, 53,973 bs.; 1890, 107,019 bs.; 1889, 115,300 bs. On passage for United States, September 1, 1891, and by cable to September 30, 1891, 32,442 bs.; 1890, 95,879 bs.; 1889, 37,333 bs. Visible supply to February 1, four months, 86,415 bs.; 1890, 202,998 bs.; 1889, 152,633 bs. Consumption since January 1, 1891, 524,683 bs.; 1890, 385,301 bs.; 1889, 33,649 bs. Delivered to consumers past thirty days, 16,309 bs.; 1890, 35,202 bs.; 1889, 20,500 bs. The same circular says: "Market has been strong all the month, commencing at 1.20, with considerable sales all along the advance until the market reached 1½; with sales at this holders are now asking 1⅝ for spot lots. Cost of import fully 1½ for October to December shipments. September shipments from Calcutta, 3,000 bs., against 45,000 last year same time. Spot stock, 30,848 paper, 23,125 Mixing. Deliveries past thirty days have been, bagging manufacturers, 13,900 bs.; paper manufacturers, 2,400 bs. Butts to arrive are divided, say, Spinning and Mixing, 15,500 bs.; paper, 14,000 bs. With the Paper Butts to arrive there are counted about 8,000 bs. Threads."

WOOD PULP.—There is a very brisk call for Ground Wood, but supplies for prompt delivery are not plentiful and there is a good deal of scratching around in search of lots. We note sale of 25 tons Norwegian dry at 1¼c. ex store, thirty days, with other lots of the same probably taken at the close. Sales of domestic have been made at 1.32½c., and other quotations are 1½c. delivered.

WOOD FIBRE.—There continues to be an active call for domestic Soda Fibre, and prices are firm. Foreign Sulphite is also in better inquiry. Domestic Soda Fibre ranges from 3¼@3½c. for Bleached. Domestic Sulphite is moving at 2.90@3⅛c. for Unbleached and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.65@3.05c.; Bleached, same process, 3⅛@3.90c.; Unbleached, sulphite process, 2⅜@3.45c.; Bleached do., 3.90@4½c.; Bleached Straw Pulp, 4@4½c. Imports this week aggregated 309 tons, being 164 tons from Copenhagen, 111 tons from Hull and 34 tons from London.

FOREIGN RAGS AND PAPER STOCK.—The primary markets for foreign rags are still firm. Packers for such lots as they may have on hand, which, by the way, are generally not the lots wanted by importers here, are willing to take old prices, but for other grades they are asking better figures. Low grade Cottons are in fair movement, but Linens are neglected. Blue Cottons are asked for and 1.62½c. is bid, which is the price which importers claim it cost them for the rags laid down here. We note sale 120 tons German Light Prints on spot at 1½c. four months. Imports for the week aggregated 6,715 bales and 309 tons, being 848 bs. rags, 70 bs. papers, 309 tons chemical fibre and 5,797 bs. manillas. Ports of shipment and quantities are as follows: Antwerp, 174 bs. rags; Bremen, 130 bs. rags, 145 bs. manillas; Calcutta, 3,493 bs. manillas; Copenhagen, 210 bs. rags, 164 tons chemical fibre; Hamburg, 65 bs. rags; Hull, 130 bs. rags, 111 tons chemical fibre, 951 bs. manillas; Liverpool, 12 bs. rags, 705 bs. manillas; London, 107 bs. rags, 70 bs. papers, 34 tons chemical fibre, 393 bs. manillas; Marseilles, 110 bs. manillas; Rotterdam, 20 bs. rags.

DOMESTIC RAGS.—There is a moderate call for stock, and prices are stronger but not quotably higher. Whites are quoted at 3½c., at which sales have been made.

BAGGING, &c.—The advance in the Gunny market last week has been sustained by the transactions this week. There is very little on spot and the general quotation is 1⅜@1.40c. We note sale 100 tons Italian Gunny at 1⅜c., and further sale of 800 tons Italian Gunny, November to January shipments at 1.35c. Burlap has been sold at 1.40, and we note sale of 100 tons German mixed at 1.10c., and 150 tons No. 1 mixed at 1⅛c. In Dundee Jute Rope there has been sale of 100 tons on p. t., but 2c. is asked at present for this class of stock. Manilla imports for the week aggregated 5,797 bales, being 145 bs. from Bremen, 3,493 bs. from Calcutta, 951 bs. from Hull, 705 bs. from Liverpool, 393 bs. from London, and 110 bs. from Marseilles.

OLD PAPERS.—There is a moderate trade, and the call has been stimulated somewhat by the low water at mill points. We note sale 10 tons Ledgers at 2.35c., and 10 tons No. 1 Soft White Shavings, strictly free from wood, at 2¾c. We quote: No. 1 Hard White Shavings, 3⅛@3¼c.; No. 1 Soft White do., strictly free from wood, 2.65@2.75c.; Soft White do., ordinary, 2½c.; Old Ledgers, 2½c.; Solid Printed Books, 1.40@1.50c.; Mixed Shavings, No. 1, 1.30@1.35c.; Mixed Shavings, No. 2, 1@1¼c.; Extra No. 1 Manillas, 1.40c.; No. 1 Manillas, ordinary, 1.20c.; No. 2 Manillas, .90@1.05c.; Light Book Stock, 60@65c.; Folded News, 55@65c.; Commons, 40c.; Bogus Manillas, 60@90c.; Straw Clippings, 55c.; Binders' do., 50c.

STRAW.—There is a steady market on moderate demands. We quote: No. 1 Rye at 65c.@70c.; Short Rye at 55@60c.; Oat at 40@45c.

ROSINS.—Prices are regular on moderate demands. We quote in lots from the yard: Common to Good Strained, $1.60@1.65; E, $1.70@1.75; F, $1.85; G, $1.97½; H, $2.15; I, $2.30; K, $2.50; M, $2.65; N, $3.45, and W. G., $3.90.

CHEMICALS.—There is only a moderate trade in the market for paper makers' chemicals. Under date of September 25 J. P. Brunner & Co. speak of the Liverpool market as follows: "A firm market for heavy chemicals all round and a fair number of transactions reported. Soda Ash is still scarce and nominal minimum quotations are as follows: Caustic Ash, 48 per cent., £5 2s. 6d. per ton; 58 per cent., £6 15s. per ton; Carb. Ash, 48 per cent., £5 7s. 6d. per ton; 58 per cent., £6 15s.; Ammonia Ash, 58 per cent., £6 10s per ton, all net cash. Soda Crystals in fair request and firmly held at £8 10s.@3 12s. 6d. per ton, net cash, according to quantity. Caustic Soda in moderate demand and spot prices firm, as follows: 60 per cent., £9 10s.@9 15s. per ton; 70 per cent., £10 15s.@11 per ton; 74 per cent., £11 15s.@12 per ton; 76 per cent., £13 5s. and upward per ton, all net cash. For contracts for 1892 a reduction of 7s. 6d. per ton under spot prices for 60 per cent., and 10 per cent. on 70 per cent., and higher strengths would be accepted. Bleaching Powder is firm at £7 10s.@7 15s. per ton for hardwood early delivery; at 5s. per ton extra, October-December, 1892, delivery." In the local market Bleach is very scarce on spot, and when a lot is offered there is a scramble for it, and the price has ranged up to 2.25c. There is a fair business in forward lots to be delivered through 1892. Alkali is in fair movement. Caustic Soda is rather quiet and with few arrivals. English Sal Soda has eased up a shade. During the week there have been sales of 200 cks. Bleaching Powder spot and to arrive at 2.15c.@2.25c.; 150 tons Soda Ash at 1.55@1.70c.; 100 drums 70 to 74 per cent. Caustic Soda at 3.05@3.07½c.; 200 bbls. Natrona Porous Alum at 2½c.; 100 bbls. Ground Alum at 1.70c.; 100 bbls. Lump Alum at 1.60c.; 100 bbls. Keystone Alum at 1⅜c.; 10 cs. German Ultramarine at 17¾c.; 10 bbls. American Ultramarine at 12½c.; 50 tons 58 per cent. Alkali at 1.47½ 1.55c.; 5 cks. Yellow Prussiate of Potash at 24½c.

CHINA CLAY.—The quiet of the market is unbroken by any new developments, but holders feel a growing confidence of a better future and display no anxiety to sacrifice goods. We quote a range of $13@18, as to quality, &c.

TWINES.—There is a fair volume of trade in progress. Quotations are as follows: Cordage—Manilla Rope, half inch, 10½c.; Sisal Rope, half inch, 7c.; New Zealand Rope, half inch, 6¼c.; Jute Rope, half inch, 5½c.; Sisal Hay Rope, 6¾c.; Sisal Lath Yarn, fine, 6¼c., and medium, 5¾c.; Jute Lines, 5½@6c.; Jute Ready, 5¾@7c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 5½c., medium, 5c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 8c.; 4½ and 6 L Jute, 10½c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c. Russian Hemp Hay Rope, 8½c.

COAL.—The tonnage laid out as likely to be mined for the month of October is not regarded as excessive. If the estimates of sales agents are correct, the market requirements are likely to be as great this year as ever, the tonnage already mined and showing as an excess over last year being put to the credit of increased consumption. Sales agents at Chicago have received strict orders to hold the price firmly at $5.25, and all parties concerned have agreed to sustain the circular rate. At New York most of the jobbers are quoting the trade as quiet, with a somewhat stronger feeling since the advent of the cooler weather; stocks in retail hands are said not to be very great, and as soon as these are moving there will be a demand on jobbers and wholesalers.

EDWIN BUTTERWORTH & CO.,
MANCHESTER, ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing,
Wood Pulp, Moist and Air Dry Pulp,
Soda and Ground Pulp,
83 GUNNY BAGGING, &c.,
OFFICE IN NEW YORK:
Tract House, 150 Nassau St., near Tribune Office,
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WATERBURY
FELTS AND JACKETS
MANUFACTURED BY
H. WATERBURY & SONS CO.,
ORISKANY, N. Y.
The Largest Manufacturers of Paper Makers' Felts in the World.
Adapted to *every* grade of paper, from the *finest* to the *coarsest*. Our wet machine or pulp felts are *unequaled* for *durability*. Every felt guaranteed to give satisfaction or may be returned.

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MARTIN ROURKE & CO.,
MANCHESTER,
PACKERS AND SHIPPERS OF
MR
MANCHESTER GUNNY BAGGINGS,
Cotton Wastes and Paper Stock,
Trentham Street Mills,
Chester Road, Manchester, Eng.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.16	@	$0.20
Flat Caps, superfines	14	@	17
Flat Caps, fines	11½	@	13
Flat Caps, engine sized	7½	@	9
Blotting, American	8	@	15
Blotting, English	17	@	....
Book, super sized and calendered	6	@	9
Book, super sized and tinted	6	@	7½
Book, extra machine finish	5½	@	6
Book, machine finish, low grade	5	@	5½
News, No. 1	4	@	4¾
News, rag and wood	3¾	@	3¾
News, straw	4	@	5
Poster	5½	@	7
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, macnine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9¼
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.35
Tissues, black, 20×30, per ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	85	@	1.00
White tissue, 24×36, ℔ ream	1.30	@	1.50
Manillas, Flour sack, cream	10½	@	12
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¼	@	6¾
Manillas, No. 2	5	@	6
Manillas, Bogus	2¾	@	3¾
Wrapping Parchment	16	@	20
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	75	@	80
Hardware, light colored, No. 1	9	@	10
Hardware, No. 1, glazed, tarred	7	@	8
Hardware, No. 1, glazed	4½	@	5
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	40.00	@	50.00
Strawboards, air dried, No. 1, ℔ ton	45.00	@	....
Strawboards, steam dried, XXX, ℔ ton	31.00	@	32.50
Strawboards, steam dried, XX, ℔ ton	29.50	@	30.00
Strawboards, air dried, Penn., ℔ ton	35.00	@	....
Strawboards, air dried, State, ℔ ton	37.50	@	40.00
Straw Wrapping, basis, 15×20, 15½ lbs. 20 sheets—			
36×40, from 38 to 42 lbs. ℔ rm	90	@	....
30×40, from 30 to 34 lbs. ℔ rm	....	@	72
24×36, from 24 to 26 lbs. ℔ rm	....	@	65
22×32, from 24 to 26 lbs. ℔ rm	54	@	....
20×30, 21 lbs., ℔ rm	....	@	48
20×30, from 14 to 17 lbs. ℔ rm	36	@	....
16×22, from 12 to 13 lbs. ℔ rm	27	@	....
18×28	....	@	33
15×20, 10 lbs. ℔ rm	23	@	24
15×20, from 7 to 8½ lbs. ℔ rm	18	@	....
14×18	....	@	15
12×16	....	@	14
11×15	....	@	12
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	2½	@	....
Cigarette Straw Tissue, per case of 100 boxes, 50 books to the box, 300 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12×18	18	@	20
14×20	22	@	....
Card Middles, ground wood	5½	@	6¼
Card Middles, long fibre wood	8½	@	9
Card Middles, rag and wood	6	@	9
Wood Fibre, bleached	3½	@	3¾
Wood Fibre, unbleached	3¼	@	....
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	....

L F B, Blue Linens	2¾@	3
Gunny Bagging, No. 1	1.45 @	1½
Gunny Bagging, No. 2	1⅜@	....
C S P F F F, No. 1 Cottons	3¾@	4
C S P F F, No. 2 Cottons	3¼@	3½
C S P F, No. 3 Cottons	2½@	2¾
C C C, Colored Cottons	1½@	1¾
C F X, Low grade Cottons	1½@	1¾
Extra Fine Blue Cottons	1⅞@	2

Alexandria Rags.

Whites	1⅜@	....
Blues	1⅜@	....
Colors	1⅜@	....

Japanese Rags.

Whites, ordinary	.... @	1¾
Blues, ordinary	.... @	1½
Blues, selected	.... @	1

Chemicals, Coloring Materials, &c.

Alkali, 48 ℔ cent	1.50 @	1.55
Alum, lump	1.65 @	....
Alum, ground	1.75 @	....
Alum, Keystone	1⅜@	....
Alum, Diamond	.... @	2¾
Alum, pearl	2¾@	2¾
Alum, porous	2¾@	2¾
Aluminous Cake	.... @	1¾
Anti-Chlorine	.... @	3¼
Bichromate Potash, American	.... @	10
Bleaching Powders, spot and to arrive	2.25 @	2.15
Cambridge Ochre	11.25 @	....
Caustic Soda, 60 ℔ cent	3.07½@	3.10
Clay, China, English, ℔ ton	12.50 @	17.00
Clay, China, "Star"	12.50 @	....
Clay, China, "Keystone"	10.75 @	....
Clay, South Carolina, ℔ ton	9.50 @	10.00
Clay, Terra Alba, French, ℔ ton	1.00 @	1.12¾
Clay, Terra Alba, American, No. 1	95 @	1.00
Corn Starch	3 @	3¼
Copperas, American	.... @	80
Extract Logwood	9¼@	....
Mineral Pulp	10.25 @	....
Orange Mineral	.... @	9½
Potato Starch	4½@	4¾
Prussian Blue, dry	30 @	35
Prussiate Potash, American	.... @	24½
Rosins, common to good strained, ℔ bbl	1.60 @	1.65
Rosins, E, ℔ bbl	1.70 @	1.75
Rosins, F, ℔ bbl	1.85 @	....
Rosins, G, ℔ bbl	1.97½@	....
Rosins, H, ℔ bbl	2.15 @	....
Rosins, I, ℔ bbl	2.30 @	....
Rosins, K, ℔ bbl	2.50 @	....
Rosins, M, ℔ bbl	2.65 @	....
Rosins, N, ℔ bbl	.... @	3.45
Rosins, W G, ℔ bbl	.... @	3.90
Sal Soda	1.10 @	....
Soda Ash, caustic, 48 ℔ cent	1.60 @	1.65
Soda Ash, carbonated, 48 ℔ cent	1.55 @	1.70
Soluble Blue	40 @	55
Spanish Brown	½@	1
Sugar Lead, white	12 @	....
Sugar Lead, brown	7 @	....
Sulphate of Alumina	.... @	2½
Sulphuric Acid, 66 ℔ cent	1 @	1¾
Ultramarine, blue	12½@	17½
Venetian Red	1 @	1¾
Vitriol, blue	5½@	5¾
Yellow Ochre Rochelle	1.35 @	1.50

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	4½@	4¾
No. 2 Whites	3¼@	....
Common Seconds	2⅞@	3
Thirds and Blues	1¾@	2
Southern Mixed Rags	1¾@	1¾
Colors, country	1 @	1¼
Colors, city	50 @	75
New Calicoes, light	2¾@	2¾
New Calicoes, dark	1¾@	2
Shirt Cuttings, best	5½@	6
Shirt Cuttings, good	4½@	5
Shirt Cuttings, unbleached	5¼@	....
Shirt Cuttings, unbleached No. 2	3½@	4
Shirt Cuttings, cheviots	2¾@	3
Overall Cuttings, blue	3 @	3¼
Overall Cuttings, brown	2¾@	3
Shoe Rags, bleached	4½@	5
Shoe Rags, unbleached	4 @	4¾
Shoe Rags, brown	3 @	3¾
Cotton Flannels, bleached	4 @	....
Cotton Flannels, unbleached	4 @	....
Corset Rags, drab	3½@	3¾
Corset Rags, white	4¼@	5
Old Corsets	30 @	35
Tailors' Seconds	2½@	3
Tailors' Colors	40 @	50
Cotton Canvas	3¾@	4
Cotton Canvas, No. 2	1½@	2
Linen Canvas	2½@	3
New Canvas Cutting	5½@	6
Insole Canvas	5 @	6
Print Papers, best	30 @	40
Print Papers, ordinary	30 @	....
Folded News	.... @	45
Old Waste Papers	20 @	25
Manilla Paper, No. 1	.... @	1.50
Manilla Paper, good mixed	75 @	1.05
Manilla Paper, blues	50 @	70
Mixed Book Stock	1.00 @	1.10
Books and Pamphlets	1½@	1.65
Book Stock, light	.... @	1
Ledgers and Letters	2¼@	2¾
Soft Book Shavings	2¼@	....
Hard White Book Shavings	2½@	3
Leather Board Chips	.... @	....
Straw Chips	50 @	60
Shivey Bagging	1½@	....
No. 1 Factory Bagging	1½@	1¾
Burlap Bagging	1.25 @	1.35
Burlap Bagging, large pieces	1.65 @	1.75
Kentucky Bagging	1½@	1¾
Mixed Bagging	⅜@	1
No. 2 Bagging	75 @	80
Shakings, soft	½@	1
Tarred Shakings	1 @	1¼
Standing Rigging	4¼@	....
Standing Rigging, foreign	3½@	....
Bolt Rope	2 @	2½
Oakum Junk, No. 2	2½@	....
Tarred Paper Junk	1½@	....
Tarred Paper Junk, inferior	1 @	....
Manilla Rope	2.30 @	....
Tarred Manilla	1¾@	....
Hemp Strings	2¾@	....
Sisal Strings	.... @	1¾
Wool Strings	1¼@	....
Flax Tow	¾@	1¼
Flax Waste	¾@	1¼

New Papers.

Superfine Book	7 @	8
Fine Book	6 @	7
News, rag and wood	5¾@	6
News, No. 1, all rag	6 @	6½
Manilla, Cream Rope	9½@	10
Manilla, No. 1, Rope	8¾@	9
Manilla, Extra Jute	6 @	6½
Manilla, Jute and Gunny	5¾@	6
Manilla, No. 2	5 @	5¼
Manilla, Bogus	4 @	5
Hardware, No. 1, tarred	7½@	8¼
Hardware, No. 2	7 @	8
Hardware, red	5 @	6
Strawboards, air dried, ℔ ton	30.00 @	60.00
Strawboards, steam dried, ℔ ton	30.00 @	40.00
Straw Wrapping, heavy	1.90 @	2¼
Straw Wrapping, light	2¼@	2½
Binders' Boards, ℔ ton	55.00 @	60.00
Leather Board, Common, ℔ lb	3 @	4
Leather Board, counter	5 @	8
Leather Board, extra	8 @	10
Tar Boards, ℔ ton	100.00 @	110.00

Chemicals.

Alkali	1.37½@	1.42½
Aluminous Cake, currency	1¾@	10½
Alum, American ground	2 @	2½
Alum, American lump	1¾@	2
Anti-Chlorine	3 @	3¼
Bi-Chromate Potash, American	10¾@	....
Bleaching Powders	2.12½@	2.15
Blackley Blue	2.00 @	3.00
Caustic Soda, 70 ℔ cent. (for 60 ℔ cent.)	2.97½@	3
Clay, English, ℔ ton	14.00 @	18.00
Clay, American, ℔ ton	13.00 @	14.00
Copperas, ℔ lb	¾@	1
Extract Logwood	5¾@	6½
Lime, Rockland, ℔ bbl	95 @	1.00
Prussian Blue, ℔ lb	50 @	60
Prussiate Potash, American, yellow	.... @	18½
Prussiate Potash, red	51 @	56
Rosin, common strained, ℔ bbl	.... @	....
Rosin, E	.... @	1.45
Rosin, F	1.50 @	....
Rosin, G	.... @	1.55
Rosin, extra pale	.... @	....
Sal Soda, English, ℔ lb	1.10 @	....
Soda Ash, 48 ℔ cent. caustic	.... @	1.55
Soda Ash, 48 ℔ cent. carbonated	.... @	1.60
Soluble Blue	55 @	65
Sugar Lead, white	12½@	13
Sugar Lead, brown	7¾@	8½
Sulphuric Acid, 66°	1¾@	1¾
Terra Alba, ℔ ton	18.00 @	20.00
Ultramarine, ℔ lb	12½@	16
Venetian Red, ℔ lb	1¾@	1¾
Vitriol, Blue	5½@	5¾
Yellow Ochre	½@	2

Wants and For Sale.

Twenty-five cents per line of eight words each insertion. No charge less than one dollar.

TO PAPER MANUFACTURERS—THE ADvertiser desires a situation as superintendent; experienced in the manufacture of news, book, colors, writings, manillas, music; references given; used to manage large and small mills. Address PAPER, care of the Journal.

WANTED SITUATION—AS MILLWRIGHT and machinist in paper mill; works wood or iron; good draughtsman and pattern maker. THOS. WILSON, Whippany, N. J.

SITUATION WANTED—BY FIRST-CLASS cylinder machine tender.
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Farley, Mass.

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care Paper Trade Journal.

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Montreal, Canada.

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WANTED—A THOROUGHLY EXPERIENCED practical paper maker to take general management of a five machine book mill with pulp works attached; to the right man a liberal arrangement will be made; all communications confidentially treated. Address G. R. C., care of the Journal.

WANTED—TWO FIRST-CLASS TISSUE MAchine tenders, for first-class modern cylinder machine. Address, with references and wages expected, THE E. B. EDDY CO., Hull, Canada.

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FOR SALE—TWO MARSHALL REFINING ENgines; nearly new; in first-rate condition. EMERSON MANUFACTURING COMPANY, Lawrence, Mass.

FOR SALE—THREE SECOND-HAND JORDAN engines, warranted as good as new, and have been taken from mills and replaced by those of our own manufacture; also, one 400 lb. and one 700 lb. beaters with new tubs. EMERSON MFG. CO., Lawrence, Mass.

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WHOLE OR PART INTEREST IN A PAPER mill just completed. It has two machines and is fully equipped with all modern appliances; capable of making ten tons of paper per day and is well situated for the New England and New York trade. Correspondence solicited. Address MANUFACTURER, care of Paper Trade Journal, 67 Federal Street, Boston, Mass.

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Four 100 H. P. Horizontal Tubular Boilers.
One 75 " " " "
Two 10x24 Corliss Engines.
One 23x48 " "
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One No. 9 Sturtevant Exhauster.
One No. 3 " "

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Seventeen Iron Dryers, 28 × 72 inches, with frames, gears and packing boxes.
One seven stack 62 inch Chilled Calenders.
One 72 inch Cone Pulley Cutter.
Four Dryers, 36 × 84 inches.

Address
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FOR SALE.

Two 76 in. Hammond Cutters.

All in good order and ready to run.

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One 76 inch Hammond Cutter, in good order. Price $150.
One 48 inch Rice, Barton & Fales Stop Cutter in good order. Price $100.
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CASE BROTHERS,
Highland Park, Conn.

FOR SALE.

A 84 inch Harper Fourdrinier part, which was new three months ago and is in first-class condition; it is to be sold and replaced by a four cylinder part.

A set of eleven (11) 30 × 72 dryers, complete with frames, &c.

Two stacks of chilled iron calender rolls, 70 inch face.

All of the above are in good condition; will be disposed of at very reasonable prices and can be seen in operation by applying.

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Counsellors-at-Law & Solicitors of Patents.

Digesters For Sale.

Having recently bought all of the machinery of the Richmond Paper Co., of Providence, R. I., we have on hand and must dispose of at once, viz.:

Two sectional cast iron Digesters, 7 ft. × 23 ft.
Two sectional cast iron Digesters, 6 ft. 6 in. × 23 ft.
Four sectional wrought iron Digesters, 6 ft. 6 in. × 23 ft.

The above are in excellent condition; the cast iron are lined with lead ⅛ in. thick and the wrought iron ¾ in. thick. For terms, &c., apply to

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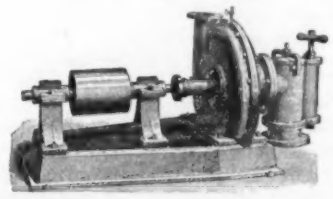

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Also Engines, Boilers, Shafting, Hangers, Belting, Wood Pulleys and General Mill Supplies.

One 8x22 ft. Rotary Boiler for paper mill for sale low. 90, 70, 50, 35 and other sizes Automatic Engines for immediate delivery.

Write us for prices and mention this paper.

PLEASE CUT THIS OUT.

All steel fly bars must go! Laid fly bars and bed plates made with natural gas are much better and practically as cheap as all steel. Our Paper Trimming, Stop Cutter and Rag Knives guaranteed superior in make and temper to all others by

ANDERSON KNIFE AND BAR WORKS,
Anderson, Ind.

Write for special information.

GODDARD MACHINE CO.,
General and Paper Mill Machinery, Holyoke, Mass., Agents for New England.

PANHANDLE LOAN AND TRUST CO.,
HENRIETTA, TEXAS,
OFFERS WELL SELECTED, GUARANTEED
FIRST MORTGAGES, 5 YEARS, 8 PER CENT.,
On productive, central business property in good North Texas towns. Interest semi-annual. Safe and profitable investment in finest agricultural state in the Union. Refer to Southern National Bank, New York; Ætna National Bank, Hartford, Conn.; Mercantile Trust Co., Providence, R. I.

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Send us Samples of their Stock

OF PAPER ON HAND,
WITH BOTTOM TEN DAY CASH PRICES.

We buy large lots and sell all grades of

Paper, Rags and Paper Stock.

We trade Stock or Cash for Paper.

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CHEMICAL PULP.

A FIRST-CLASS ARTICLE.

Clean, strong and good colors, in Unbleached and Bleached.

We make Pulp to suit Paper for which it is required.

Samples and prices furnished.

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SUCCESSORS TO WM. ANGUS & CO.,
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One 68 in. Fourdrinier Paper Machine, consisting of gun metal couch and press rolls, sixteen 48 in. diameter dryers, two stacks chilled calenders, revolving reel, cutter, slitter, Manning winder, Marshall driving train, Gould screen.

One stack 37 in. and one stack 41 in. web supercalenders, with revolving reel, friction clutch and friction pulley, Holyoke Machine Co.'s make, nine rolls in each.

One 18 × 48 in., almost new Brown condensing steam engine, 200 horse power.

Two horizontal Gould refining engines.
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Several Gould screens.
Two three-knife, 6½ ft. wood chippers.
Two barkers, one splitter and saw.
One 66 in. two cylinder paper machine complete
One pair 30½ in. horizontal Leffel wheels, with case.
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Large lot H. & S. pumps, from 2 in. to 10 in. discharge.

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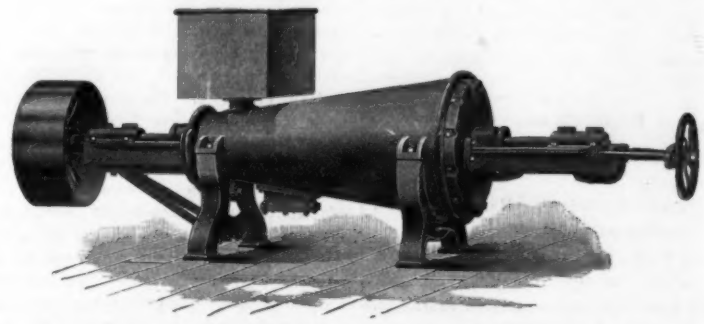

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Screens, Calenders, Rag Cutters, Cylinder Molds, Deckel Straps, Paper Cutters, Screen Plates, Dandy Rolls, Stuff Box Trucks, Iron and Brass Castings.

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It is used **everywhere** that a **uniform** motion is **essential or desirable**, and is one of the most **profitable** little devices ever put in a mill. Aside from its great convenience it will pay for itself in thirty days in dollars and cents. Dial, 12 inches diameter. **A glance at the dial from any part of the mill tells the exact speed. Weight, 10 pounds.**

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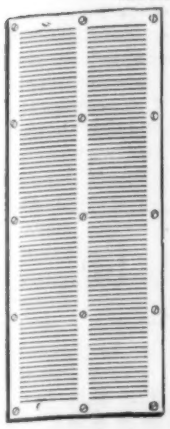

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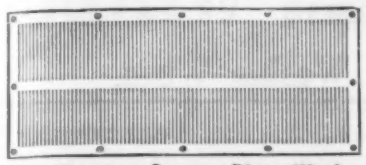

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Accurately, Promptly and Cheaply.

All **NEW PLATES** are made from our "Special Brass," which is the best quality obtainable.

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In ordering, give width of slot in thousandths of an inch, if convenient.

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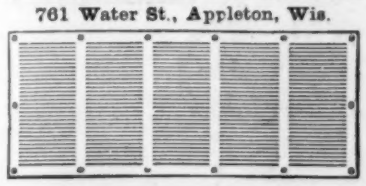

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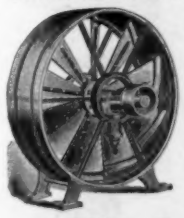

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Machine Rooms, Rag Dusters, Etc.,

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EXHAUST FANS,

Adjustable Blades,

Self Oiling Bearings, with or without Steam Engine attached.

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Three Different Machines

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Strength, Thickness and Weight.

A NEW PRINCIPLE APPLIED IN TESTING PAPER.

Thickness shown to the sixteen-thousandth part of an inch.

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Price, complete,	$150.00
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CAUTION.

All persons are liable to prosecution who make, buy or use Paper Testers that confine and break paper within its edges, as my Patents cover that method.

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ANALYTICAL and CONSULTING CHEMISTS

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Analyses carefully made. Advice on Chemical subjects given. Special attention paid to all matters connected with the Manufacture of Paper.

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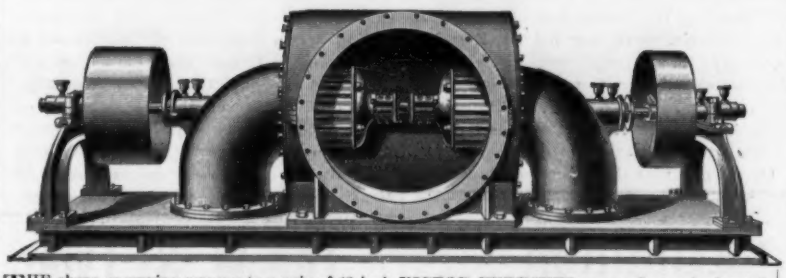
THE VICTOR TURBINE.



THE above engraving represents a pair of 12 inch **VICTOR TURBINES** arranged on a horizontal shaft, with Cast Iron Flume, Draft Tubes, End Bearings for Shaft, and Driving Pulleys complete, all mounted upon a substantial cast iron bed plate. The entire arrangement is very complete and strictly first class in every particular. We are now prepared to furnish Victor Turbines either single or in pairs on horizontal shafts and where the situation admits of their use we recommend them.

UPRIGHT or HORIZONTAL.

In use in a large number of best Paper and Pulp Mills in this and other Countries.

Possesses more than Double the Capacity of ordinary Water Wheels of same Diameter, and has produced the Best Results on Record, as shown in the following tests at Holyoke Testing Flume:

SIZE WHEEL.	HEAD IN FEET.	HORSE POWER.	PER CENT. OF USEFUL EFFECT
15 inch.	18.06	80.17	.8932
17½ inch.	17.96	96.35	.9030
20 inch.	18.21	49.00	.8532
25 inch.	17.90	68.62	.8584
30 inch.	11.65	52.54	.8676
35 inch.	17.29	133.19	.8497
40 inch.	16.49	148.93	.8253
48 inch.	15.51	179.29	.8202

Such results, together with its nicely working gate and simple, strong and durable construction, should favorably commend it to the attention of all discriminating purchasers.

THESE WHEELS ARE OF VERY SUPERIOR WORKMANSHIP AND FINISH.

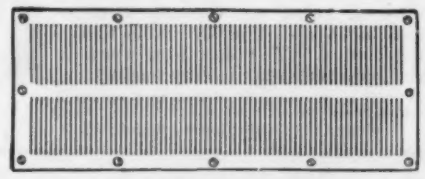
THE VICTOR WHEEL is particularly adapted to setting on **HORIZONTAL SHAFT,** DISPENSING ENTIRELY WITH GEARS.

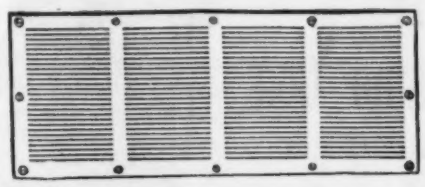
STATE YOUR REQUIREMENTS AND SEND FOR CATALOGUE TO THE

STILWELL & BIERCE MFG. CO., DAYTON, OHIO, U. S. A.

ANNANDALE *Screen Plate Co.,*

PATERSON, N. J.





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Our new Plates are made of the

VERY BEST METAL,

and for price and durability cannot be surpassed.

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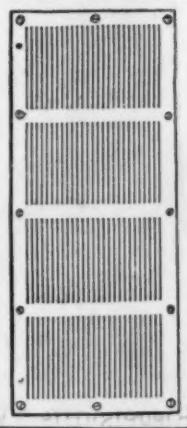

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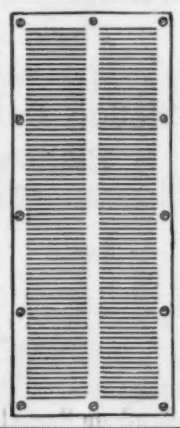
OF BRASS OR CAST METAL

AT PRICES

THAT CANNOT BE SURPASSED.

BEST STOCK USED.

Old Plates Bought.



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PUMPS and VALVES

For Pulp and Paper Mills.

☞ Send for Catalogue D and Discounts.

EXHAUST FANS

For taking bark from barkers in pulp mills.

Every modern mill must have one.

FANS, BLOWERS,

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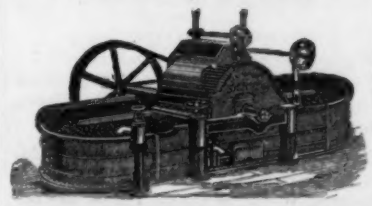

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An improvement in Washing Engines.

MACHINISTS AND MILLWRIGHTS.

Manufacturers of Beating and Washing Engines, Pumps, Rag Dusters, and Paper Mill Work in General.

MILLWRIGHT WORK A SPECIALTY.

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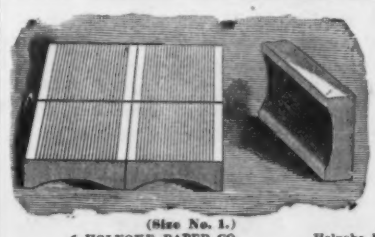

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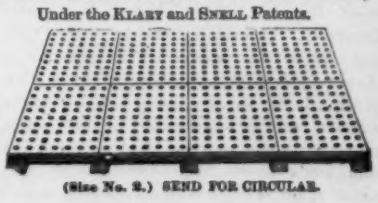
Under the KLARY and SNELL Patents.



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ROTARY GLOBE BLEACHING BOILERS

For Rags, Rope, Tow, Straw and other Paper Materials.

ALSO ALL KINDS OF

Boilers and Heavy Sheet and Boiler Iron Work for Paper Mills a Specialty.

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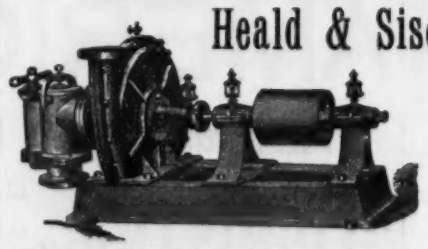
THE OLD RELIABLE

Heald & Sisco Centrifugal Pump.



MORE OF THEM USED BY PAPER MAKERS THAN OF ALL OTHER KINDS COMBINED.

More than Fourteen Thousand in Use.

CAUTION!—Other pump makers are advertising their wares as the "Baldwinsville" Centrifugal Pump. This claim is fraudulent and intended to deceive. We are the only manufacturers of Centrifugal Pumps in Baldwinsville, and we warn all purchasers against parties falsely claiming otherwise.

MORRIS MACHINE WORKS (formerly Heald & Morris), Baldwinsville, N. Y., U. S. A.

Manufacturing News.

EASTERN STATES.

The new pulp mill at Cross' Dam, Franklin, N. H., has been started up.

G. A. Robertson, paper manufacturer, Hinsdale, N. H., has put in a 1,000 pound beating engine.

The Smith Paper Company, Lee, Mass., was compelled to shut down its mills on the 2d inst., because of the unprecedented scarcity of water in their locality.

The new paper mill at Berlin, N. H., has been started up.

The Housatonic Mill, Lee, Mass., will soon be ready to start up.

The mill lately owned by H. A. Parsons, Loudville, Mass., having been bought by Buchanan, Bolt & Co., is undergoing thorough repairs. A new 20 inch Leffel turbine is being put in; also a 26 horse power Leffel steam engine and another beating engine.

The Seymour Paper Company, Windsor Locks, Conn., has ordered an 84 inch Aerophor paper dampener.

The contract for building the fibre mill at Jay Bridge, Me., has been given out.

Mrs. J. S. Palmer, wife of ex-Postmaster Palmer, of Portland, Me., has secured a patent on a process for bleaching wood pulp. It is claimed that her invention is of great value.

Arrangements have been perfected for building the new paper mill at Augusta, Me., and a mortgage for $100,000, to Oscar Holway, Frederick S. Lyman and Lendall Titcomb, trustees for the bondholders, has been recorded. The new parties who acquire an interest in the plant control the Glen Manufacturing Company, of Berlin Falls, and the Haverhill Paper Company, of Haverhill, Mass. The new mill will be one story in height.

For some little time past the Hollingsworth & Whitney Company has had an 88 inch Aerophor paper dampener in operation at its Gardiner, Me., mill, and the results have been so satisfactory that the company has ordered another 88 inch dampener and two 64 inch dampeners.

At Bristol, N. H., the very extensive repairs and improved machinery of the Mason-Perkins Paper Company's plant give increased facilities of operating and an enlarged capacity of production.

A movement is under way for the establishment of a paper mill at Bangor, Me., for the manufacture of manilla paper.

The Boston Flint Paper Company, Hallowell, Me., has made an addition to its mill, having added rooms for the manufacture of molded paper and paper belts.

The W. A. Harris Steam Engine Company, Providence, R. I., built the Corliss engines in use at the Denver (Col.) Paper Mills. This company is very busy, having recently booked several large orders, among which are large compounds for the Pawtucket Gas Company, of Pawtucket, R. I.; Charleston Light and Power Company, Charleston, S. C.; Georgia Electric Light Company, Atlanta, Ga.; Freeman Mills, West Superior, Wis.; Haverhill Electric Company, Haverhill, Mass., and Overman Wheel Company, Chicopee Falls, Mass.; a triple compound for Purdue University, Lafayette, Ind., and several simple engines varying from 50 to 300 horse power for other parties. Not only has the company's trade been excellent in this country, but it reports an increase in export orders as well. Among the paper mills using the Harris-Corliss engines are the following named: Webster Paper Company, Orono, Me.; Glen Manufacturing Company (4), Berlin Falls, N. H.; L. L. Brown Paper Company, Adams, Mass.; Byron Weston (2), Dalton, Mass.; Hollingsworth & Whitney Company (2), South Braintree, Mass.; Tileston & Hollingsworth, Boston, Mass.; L. Hollingsworth, Bridgewater, Mass.; F. W. Bird & Son (Cross compound), East Walpole, Mass.; Fairfield Paper Company (2), Fairfield, Mass.; Franklin Paper Company, Excelsior Paper Company, George R. Dickinson Paper Company (4), Newton Paper Company, Riverside Paper Company, Chemical Paper Company No. 2, Whiting Paper Company, Holyoke, Mass., Haverhill Paper Company, Haverhill, Mass.; Bacon Paper Company, Lawrence, Mass.; Russell Paper Company (2), Lawrence, Mass.; Middleton Paper Mills, Middleton, Mass.; Fairchild Paper Company, East Pepperell, Mass.; Hollingsworth & Vose (2), West Groton, Mass.; Crane Brothers, Westfield, Mass.; L. L. Brown & Co., West Cummington, Mass.; Jos. Parker & Sons (Cross compound), New Haven, Conn.; Janeway & Co., New Brunswick, N. J.; Janeway & Carpenter, New Brunswick, N. J.; Westmoreland Paper Company, West Newton, Pa.; Friend & Fox Paper Company, Cincinnati, Ohio; Franklin Paper Company (2), Franklin, Ohio; American Strawboard Company, Tiffin, Ohio; Nelson-Spencer Paper Company, Minneapolis, Minn.; Denver Paper Mills Company (two Cross compounds, one high pressure), Denver, Col.

MIDDLE STATES.

Hoffman & Thompson's paper mill at Walesville, N. Y., which was burned in March, has been rebuilt and is now in operation. The capacity of the mill has been increased, and it will turn out a better grade of paper than before.

It is reported that a purchase of 25,000 acres of land covered with pulp wood in the vicinity of Titusville, N. Y., has been made and that it is proposed to erect a large pulp mill below the Titusville saw mill and a big paper mill on or below the falls above the pond of the present pulp mill.

P. H. Glatfelter has ordered two 86 inch Aerophor paper dampeners (to be applied to the stock) for his Spring Grove Paper Mills.

Manning & Peckham, Troy, N. Y., will start their mill on Monday next. The plant has been overhauled and improved and the output will be increased. The mill is nearly three months behind with its orders.

WESTERN STATES.

Work on Newman's new paper mill at Toledo, Ohio, is being pushed, and it is expected that the mill will soon be ready to start up.

A paper mill is to be built at Lincoln. Ill., by a company consisting of Joseph Hawkins, W. E. Bennett, Frank Hoblit. Sylvester Hoblit, Alexander Hoblit. The mill will be completed by January 1, 1892.

It is proposed to build a paper mill at Redlands, Cal.

The King Powder Company is considering the advisability of fitting up a paper mill at South Lebanon, Ohio, to manufacture the paper used in the construction of their cartridges. The company now owns the old Wright flour and saw mills and has ample water power for the purpose.

The people of Prairie City, Ill., are making an effort to secure a paper mill, with, it is said, some prospect of success.

The Muncie Pulp Company, Muncie, Ind., in addition to its extensive mills in that city, will soon erect one of the largest pulp mills in the West, the plan and specifications for which are now being made.

The Vincennes Paper Company, Vincennes, Ind., has made considerable improvement in its plant. A new rotary boiler has been put in.

A paper mill is projected at Boise, Idaho.

The Anderson Paper Company, Anderson, Ind., has built a new boiler room 40 feet square, which will contain two new boilers, each of 300 horse power. A new wood pulp machine will be put in and two new beating engines.

The Michigan Wood Pulp Company, Niles, Mich., is adding a 90 inch Fourdrinier machine to its plant.

The Sangamon Paper Company, Riverton, Ill., has got its electric plant in operation, and it gives satisfaction and fills a long felt want for lighting the mill.

There has been a strike of hod carriers at the new paper mill at Green Bay, Wis., for an advance of wages from $1.50 to $1.75 per day.

An acid plant for the Louis Snider's Sons Company, Hamilton, Ohio, is being put up by Wendler & Spiro, of Watertown, N. Y., and Mr. Spiro has gone on to superintend the work.

SOUTHERN STATES.

A location for a paper mill at Atlanta, Ga., is being sought.

Personals.

A. Christie, of James Crompton & Co., England, arrived in this city yesterday, coming by way of Canada.

William Theodore Furniss, second son of N. H. Furniss, will be married to Jessie C. Foster, of Wissinoming, Philadelphia, Pa., on October 20.

George A. Mather, of Peter R. McQuie & Son, Liverpool, is now in this city, having arrived here last Monday on the City of Berlin.

John Rowe has gone from Adams, Mass. to Louisville, Ky., to take a position as chief engineer of the Dupont Paper Company, of that place.

In the Methodist Church at Birmingham, Conn., on last Wednesday evening Bertha Beardsley, daughter of Warden Beardsley, and Edward Wilkinson, son of the paper manufacturer, were married by Rev. Mr. Lathbury. Many people were present and the church was handsomely decorated for the occasion. Mr. and Mrs. Wilkinson will visit the principal American cities on their wedding trip.

On the day that the Columbus Paper Mill (Columbus, Ohio) shut down because of the suspension of Yeatman Anderson, the employees took the opportunity of expressing their feelings of gratitude and respect to the firm for its uniform kindness and consideration of their wants. Mr. Clough in feeling terms expressed the sentiments of the employees toward their employers and expressed the hope that they (the employers) would again run the mill, which they had carried on for twenty-six years. George Anderson cordially reciprocated the feelings of the employees as expressed by Mr. Clough. The occasion was also taken advantage of to present the foreman, John B. Preston, with a gold chain. Mr. Preston had been in charge of the mill for a few months only; but during that time had won the esteem of every employee, as well as the good will of the Messrs. Anderson, who evinced the appreciation of his abilities by the presentation of a gold charm in imitation of a ream of paper. The finisher stated that Mr. Preston had increased the output of the mill about 1,475½ pounds per day on an average since he had been there. Mr. Preston suitably acknowedged the present.

THE "Hamilton" Felt.

"Best and Most Economical Made."

Wise Paper Makers don't always want to buy high priced imported Felts, nor do they want to experiment with inferior grades of domestic ones. The "Hamilton" answers their requirements in every respect.

In ordering, mention kind of stock used, quality of paper made and speed of machine.

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FOURDRINIER WIRES,

Cylinder Faces and Washer Wires.

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Breaker Calenders,
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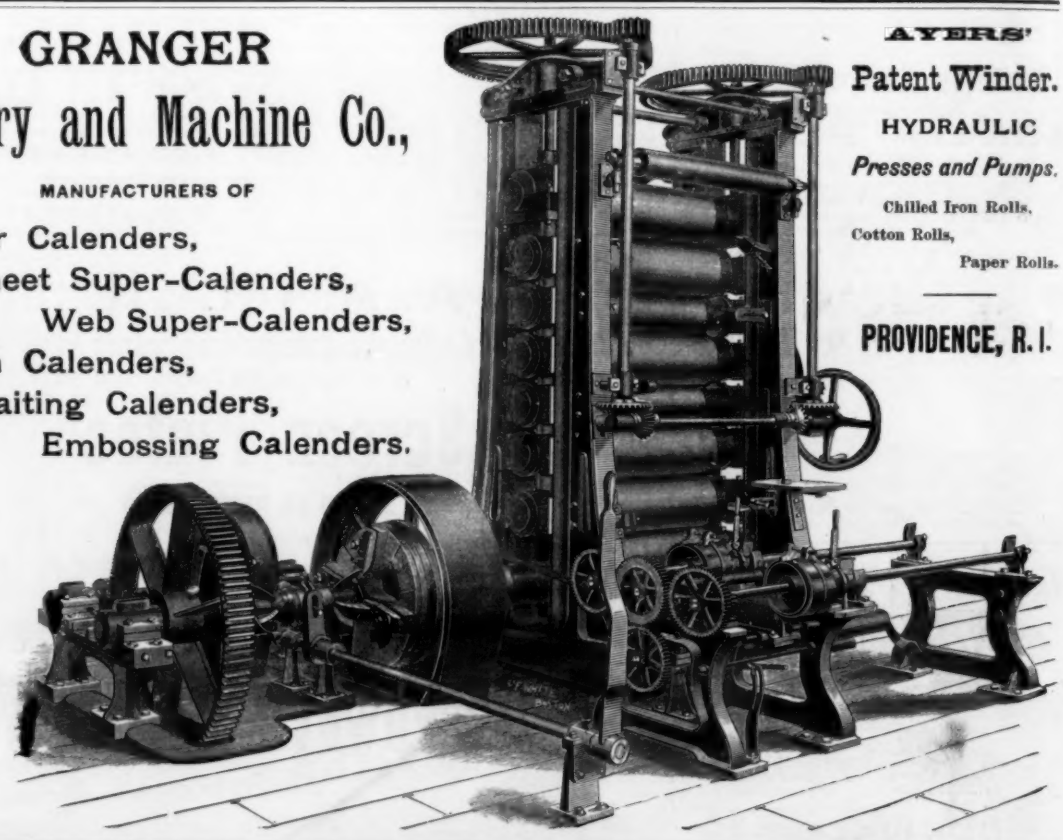

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Chilled Iron Rolls,
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Paper Rolls.

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ESPECIALLY CONSTRUCTED to resist the effects of adhesive corrosion or sediment, both inside and outside the sprinkler.

ALL MOVING PARTS are joined together by the fusible solder and are lubricated by it when it melts.

A GLASS VALVE, non-corrodible, non-adhesive and impenetrable.

It retains the essential features of the original GRINNELL SPRINKLER, which has worked successfully during the past eight years in over 800 actual fires.

Officially approved and accepted by the New England Factory Mutual Insurance companies and by the Factory Improvement Committee of the New England Exchange.

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Forty-five Regular Sizes, from 40 to 2,000 Horse Power.

All sizes have our new design of VALVE GEAR, CROSSHEAD, NOISELESS DASH POTS, PILLAR BLOCK and ENGINE FRAME, with its Heavy Intermediate Support. Also many other improvements in design and construction with enlarged CRANK PINS and MAIN JOURNALS and CROSSHEAD GIB surfaces. In fact, all wearing surfaces are materially enlarged, and every detail has received the most careful attention, insuring DURABILITY of ENGINE, ECONOMY in the use of STEAM and REGULARITY in SPEED.

All oil cups are of glass with nickel plated trimmings and sight feed, and can be filled while engine is running. We also use the BEST make of Cylinder Sight Feed Lubricator.

We construct these engines either Condensing, Non-Condensing or Compounded in various forms, jacketed or unjacketed, horizontal and vertical.

Our engines are adapted for use in Electric Light, Railway and Power Plants, Silk, Cotton and Woolen Mills, Flouring Mills, Lumber Mills, Rubber Mills and any place requiring regular speed and an economical use of steam. Small parts are made interchangeable and kept in stock.

When writing mention this Paper. We solicit correspondence, and when desirable personal attention will be given to location and arrangement of plants.

WM. A. HARRIS, PRESIDENT and TREASURER.

ORGANIZED JULY 1, 1889. CAPITAL, $6,000,000.

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Manufacturers of STRAW BOARDS, PULP LINED BOARDS, Lined Straw Boards, Combination Boards,

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"LIGNISTRA" (A SUBSTITUTE FOR PLASTER.)

BUILDING BOARD, PLAIN BOARD, TARRED BOARD, WATERPROOF BOARDS,

Barrel Layers, Peach Baskets, Egg Cases and Fillers.

Popular Prices! Attractive Terms! Prompt Shipments! General Office, PULLMAN BUILDING, CHICAGO.

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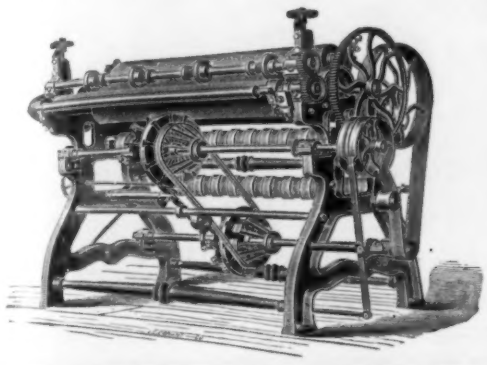
THE J. H. HORNE & SONS CO., LAWRENCE, MASS.



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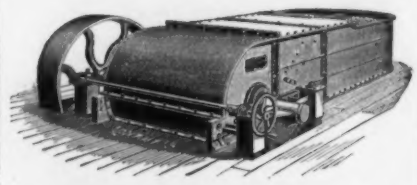
CYLINDER MACHINES,
WET MACHINES,
CALENDER ROLLS,
CYLINDER MOLDS,
PAPER DRYERS,
PAPER CUTTERS,
REVOLVING REELS,
UPRIGHT REELS.
CONE DRIVES,
FAN PUMPS,
STUFF PUMPS,
SUCTION PUMPS,



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GUN METAL ROLLS,
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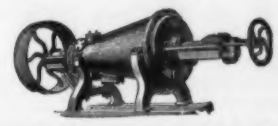

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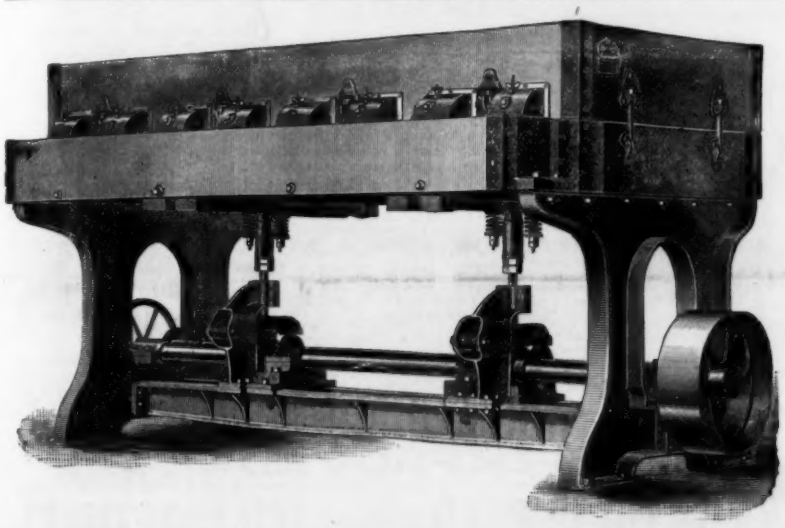

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SIMPLE, DURABLE, PERFECT, COMPACT.
COMPLETE, NOISELESS, NO STRINGS, LESS POWER.

Plates are sure to last longer, and but two-thirds the number being necessary. **No waste of stock when washing up.**

Occupies a small space; a simple, solid built flooring the only foundation necessary.
Six (6) hours' time only required to put in position ready for work.
Excellent work accomplished with eight (8) plates and 11-1000 screen plate.
In ordering the Screens no particulars are required.

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WARRANTED. THREE MONTHS' TRIAL GIVEN. ADDRESS

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DRYERS,
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Screen and Vats, Engine Rolls, Suction Box Plates, Tube Rolls, Stock Boxes of all kinds, Roll Bars, Bed Plates and Rag Knives.

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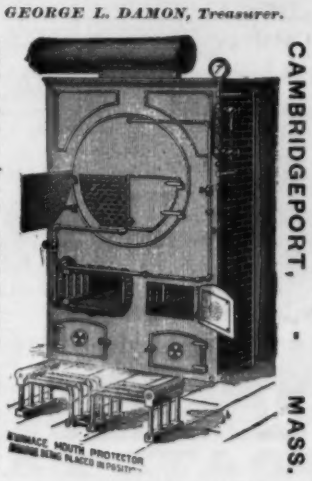

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Freight Classification.

One of the most important elements, says a contemporary trade journal, in the adjustment of freight rates is the question of "classification." Owing to the great number of items carried they have to be arranged in classes, with varying rates, dependent upon value, risk of damage, quantity that can be carried in a car, value of the service, competition of the various markets and other considerations. Different rates are fixed for the different classes, and of course the rate of freight on an article is practically decided by the class in which it is placed.

The question of classification therefore is of great importance to shippers, and yet heretofore the question of what class an article shall be placed in has rested absolutely with the carriers. In most questions where there are two parties in interest both have a voice, but in this the carriers decide for both sides absolutely.

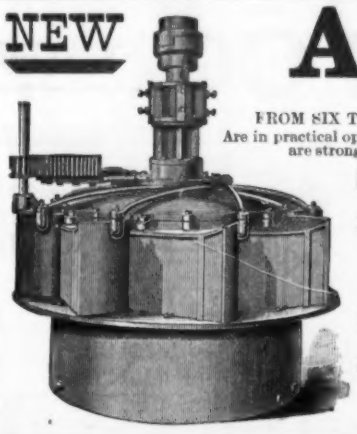
An article may be so classified that it means prosperity to a manufacturer or the reverse, and in a question of such moment it would seem only reasonable that somewhere there should be lodged a power above that of the carrier to decide what is reasonable.

The Interstate Commerce Commission have for some time past urged upon the principal railroads the adoption of a uniform classification, and this subject has been under consideration by a committee representing the trunk lines, both East and West. They have reported a schedule, but it has not been agreed to by the different lines, and therefore nothing as yet has been done about it. Meantime the roads are working under two classifications, one covering the territory east of Chicago and the other the territory west of Chicago.

In the present classification a very great injustice is done to shippers of less than carload lots, which on many articles are classified vastly higher than the same articles in carloads. This is a discrimination against the smaller shipper, which is opposed alike to the true interest of the roads and the spirit which should govern the operation of railroads.

It is to be hoped that the Interstate Commerce Commission or Congress will take up this question and insist that a classification fairly representing alike the interest of the railroads and all classes of shippers shall be agreed upon.

NEW AMERICAN TURBINE.



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Are in practical operation under heads from 4 to 100 feet head: are strong, durable and give high efficiency.

BEATING ENGINES
Cast Iron or Wood Tubs
Made heavy and strong, double lightered, with well made Cone Washers.

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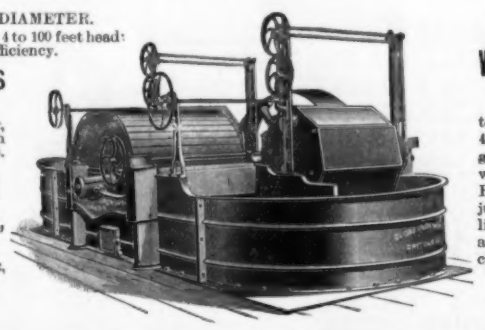
Successors to
STOUT, MILLS & TEMPLE,
Dayton, Ohio, U. S. A.



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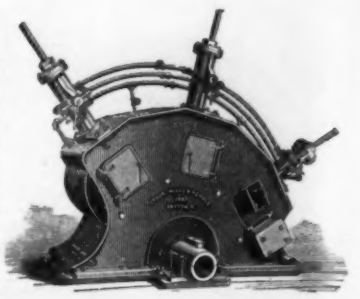
Superior in construction to any made. Capacity, 4,000 to 6,500 pounds extra good pulp per day, dry weight, per each grinder. Hydraulic feeds, fine adjustments; strong and reliable in every way. Two and three pocket machines.
Descriptive Catalogue Sent Free.



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Simple, Economical and of the Best Workmanship.
Write for Catalogue to the Builders,
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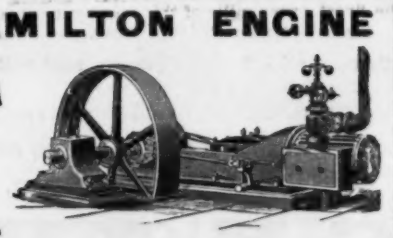

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All kinds of Boilers and Heavy Sheet and Boiler Iron Work for PAPER MILLS a Specialty.
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OVER 130 ALREADY SOLD.
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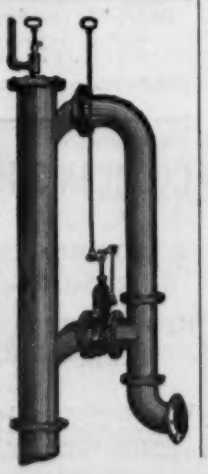

No wear, never needs priming, always gives a dry edge, and stronger and more reliable and steady suction than any double action or three plunger pump. Improved Siphon made of sufficient capacity to work all the boxes on any wide fast running Fourdrinier machine. Less water needed than to drive a pump Also used in connection with boxes of cylinder machines, Fourdrinier wet felts and felts of wet machines. Write for testimonials and prices.

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Paper Stock.
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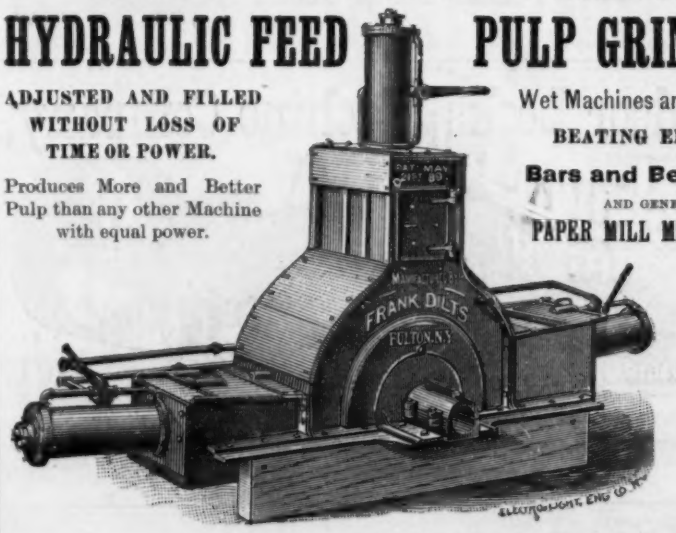

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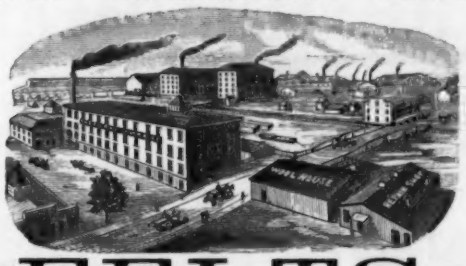

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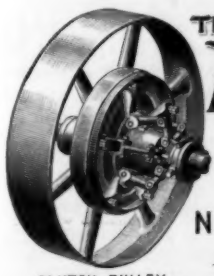

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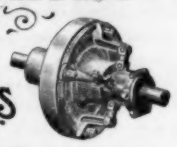

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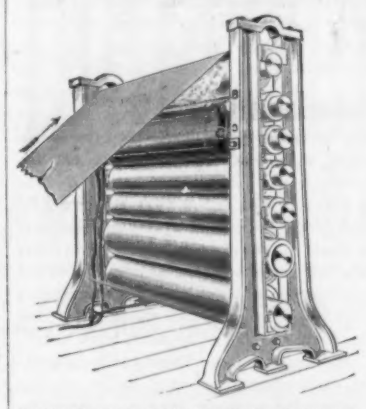

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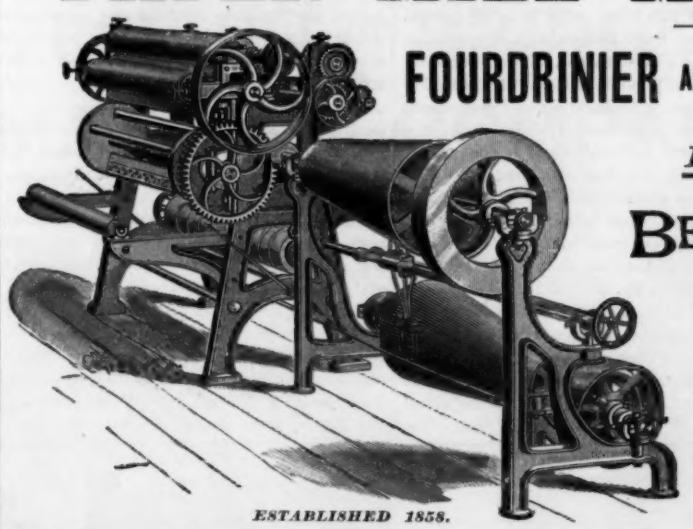

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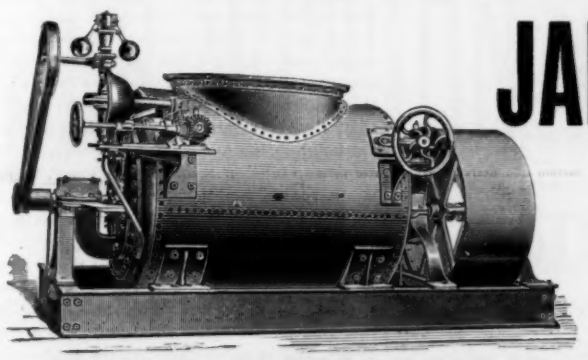

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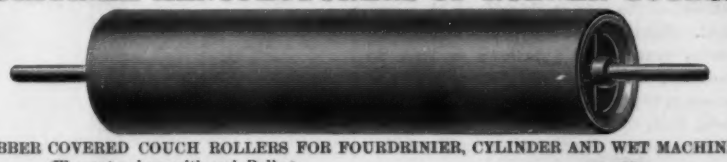

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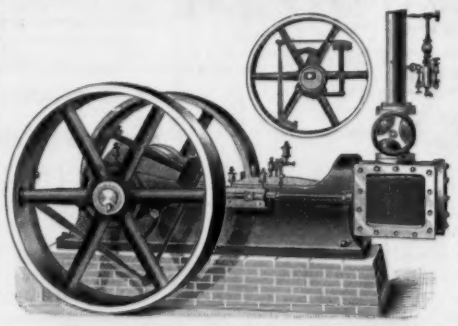

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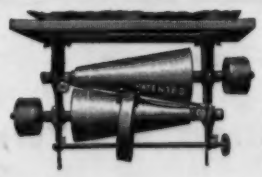

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The Elastic Limit.

When engineers first began to test the materials they used in their structures it was very quickly recognized that if a specimen was loaded beyond a certain point it did not recover its original dimensions on removing the load, but took a permanent set. The limiting stress on straining below which no permanent set could be detected on removing the load was called the elastic limit. Since under these conditions a bar appeared to recover completely its original form and dimensions on removing the load, it appeared obvious to the first experimenters that it had not been injured in any way by the load, and hence the working load might be deduced from the elastic limit by using a small factor of safety.

Experience showed, however, that in many cases a bar would not carry safely a stress anywhere near the elastic limit of the material as determined by these experiments, and the whole theory of any connection between the elastic limit of a bar and its working load became almost entirely discredited, and engineers employed the ultimate strength only in deducing the safe working load to which their structures might be subjected. Still, experience gradually accumulated, and it was observed that a higher factor of safety was required for a live load than for a dead one. This was at first attributed to the effect of impact, and to a certain extent this was no doubt true; since if a moving body strikes a structure the work stored up in the body must be taken up by the elastic deformation of the structure, which will be correspondingly greater than if the load was gently laid on it. In 1871, however, Wöhler published the results of a number of experiments on bars of iron and steel subjected to live loads.

In these experiments the stresses were put on and removed from the specimens without impact, but it was, nevertheless, found that the breaking stress of the materials was in every case much below the statical breaking load. Thus, a bar of Krupp's axle steel having a tenacity of 49 tons per square inch broke with a stress of 28.6 tons per square inch when the load was completely removed and replaced without impact 170,000 times. These experiments were made on a large number of different brands of iron and steel, and the results were absolutely concordant in showing that a bar would break with an alternating stress of only, say, one-third the statical breaking strength of the material, if the repetitions of stress were sufficiently numerous. At the same time, however, it appeared from the general trend of the experiments that a bar would stand an indefinite number of alternations of stress, provided the stress was kept below the limit.

These experiments, while they showed that the impact was insufficient to account for the peculiarly detrimental action of a live load, and that the statical breaking strength was not sufficient in itself to properly proportion a structure, did nothing toward rehabilitating the elastic limit as a measure of the safe working load of a material. For this it now appears there were several reasons. We believe it was Sir Frederick Bramwell who professed to be unable to say what a horse power was, because, first, there was the true horse power of about 22,000 foot pounds per minute; next there was Watt's horse power of 33,000 foot pounds per minute, and finally there was nominal horse power, which was anything the engine builder liked to make it. A remark of the same nature might be made with reference to the elastic limit. There is first the maker's elastic limit, which is the yield point of the material as it comes from the rolls; next there is the real primitive elastic limit of the material, which corresponds to the point at which stress ceases to be sensibly proportional to strain, the bar being tested after being brought to a state of ease; finally, there is the elastic limit of the bar after it has been loaded in various ways, which may be anything the experimenter chooses to make it, up to nearly the breaking point.

It is to Professor Bauschinger, of the Munich Technological Laboratory, that we owe the proof of the fact that the elastic limit has nothing whatever to do with the breaking down point with which it is so commonly considered as identical. Professor Bauschinger defines the elastic limit as the point at which stress ceases to be sensibly proportional to strain, the latter being measured with a mirror apparatus reading to $\frac{1}{5000}$th of a millimetre, or about $\frac{1}{100000}$ in. This limit is always below the yield point and may on occasion be zero. On loading a bar above the yield point, this point rises with the stress, and the rise continues for weeks, months and possibly for years if the bar is left at rest under its load. On the other hand, when a bar is loaded beyond its true elastic limit, but below its yield point, this limit rises, but reaches a maximum as the yield point is approached and then falls rapidly, reaching even to zero. On leaving the bar at rest under a stress exceeding that of its primitive breaking down point, the elastic limit begins to rise again, and may, if left a sufficient time, rise to a point much exceeding its previous value.

This property of the elastic limit of changing with the history of a bar has done more to discredit it than anything else; nevertheless, it now seems as if it, owing to this very property, were once more to take its former place in the estimation of engineers, and this time with fixity of tenure. It had long been known that the limit of elasticity might be raised, as we have said, to almost any point within the breaking load of a bar. Thus, in some experiments by Professor Styffe, the elastic limit of a puddled steel bar was raised 16,000 pounds by subjecting the bar to a load exceeding its primitive elastic limit, and similar cases could be multiplied indefinitely. Most experimenters, however, had overlooked the importance of the fact that a bar has two limits of elasticity, one for tension and one for compression, and it was reserved for Professor Bauschinger to determine whether the raising of the elastic limit in tension had any effect on the limit for compression.

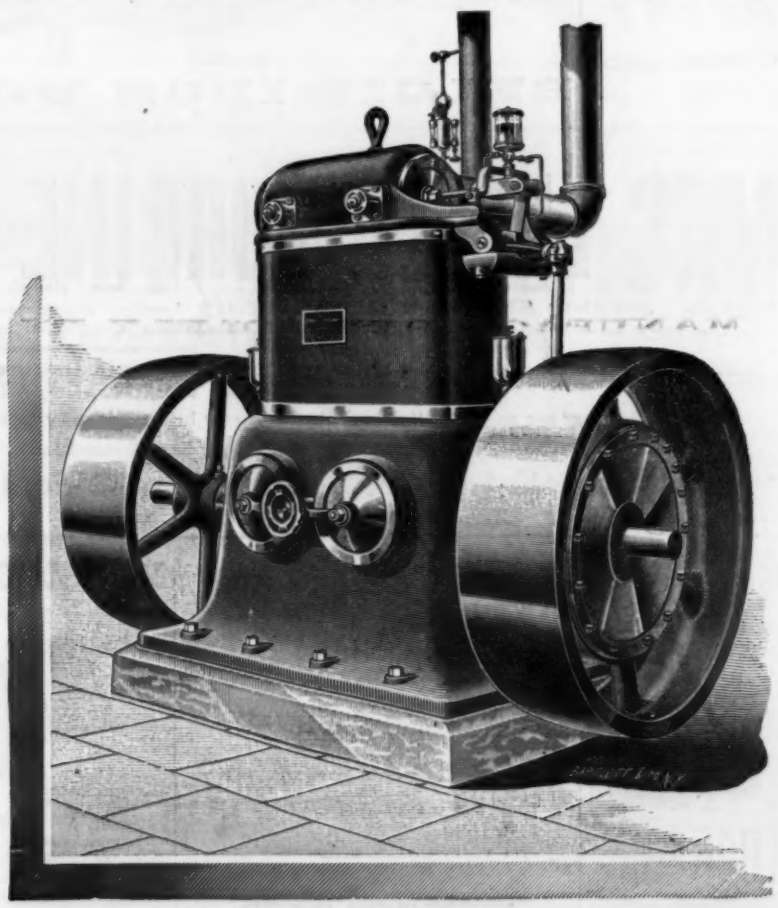
Taking a number of bars as received from the factory, these bars were first loaded in tension until stress ceased to be sensibly proportional to strain. The load was then removed and the bar tested in compression until the elastic limit in this direction had been exceeded. This process raises the elastic limit in compression, as would be found on testing the bar in compression a second time. In place of this, however, it was now again tested in tension, when it was found that the artificial raising of the limit in compression had lowered that in tension below its previous value. By repeating the process of alternately testing in tension and compression the two limits took up points at equal distances from the line of no load, both in tension and compression. These limits Bauschinger calls natural elastic limits of the bar, which for wrought iron correspond to a stress of about 8½ tons per square inch, but this is practically the limiting load to which a bar of the same material can be strained alternately in tension and compression without breaking when the loading is repeated sufficiently often, as determined by Wöhler's method, and it is now possible to explain why the bars break at such unexpectedly low loads when thus subjected to alternating stresses.

As received from the rolls the elastic limit of the bar in tension is above the natural elastic limit of the bar as defined by Bauschinger, having been artificially raised by the great deformations to which it has been subjected in the process of manufacture. Hence, when subjected to alternating stresses, the limit in tension is immediately lowered, while that in compression is raised until they both correspond to equal loads. Hence, in Wöhler's experiments, in which the bars broke at loads nominally below the elastic limits of the material, there is every reason for concluding that the loads were really greater than true elastic limits of the material. This is confirmed by tests on the connecting rods of engines, which, of course, work under alternating stresses of equal intensity. Careful experiments on old rods show that the elastic limit in compression is the same as that in tension and that both are far below the tension elastic limit of the material as received from the rolls. It thus appears that those engineers who have discarded the idea of the elastic limit as a measure of the working strength of a bar, and have proportioned their structures from the results obtained by Wöhler, have really, in spite of themselves, been working on the very assumption they profess to discard. "Thus the whirligig of time brings in its revenges."

Hard steel is so little used, comparatively speaking, in the work of an engineer that most people are, on first becoming acquainted with the facts, greatly surprised at the high stresses under which such steel is worked in springs. Mr. Hartnell has pointed out that the safe working load of such springs is often as much as 60,000 to 70,000 pounds per square inch, and in some experiments on a volute buffer spring Mr. A. E. Young has found that stresses of 59 tons per square inch were safely carried. Specimens of the same steel in an unhardened condition showed an elastic limit of 43 tons per square inch in tension, with a breaking stress of 68.77 tons per square inch. A similar bar after hardening broke at a stress of 67.73 tons per square inch, with an elastic limit of 67.33 tons, or very nearly equal to the breaking load of the bar. No experiments were made on the compression elastic limits; but if, as is probable, the effect of the hardening also raised the limit in compression, it is easy to see why steel is hardened and tempered before being used for springs, although the modulus of elasticity of the metal is unchanged. The elastic limits being raised by the hardening greater working loads can, on Professor Bauschinger's theory, be carried, and experience bears this out.

The opinion has at various times been emitted that straining a metal beyond its elastic limit injures it, but this appears to be untrue. It is not the mere straining of a metal beyond one elastic limit that injures it, but the straining many times repeated beyond its two elastic limits. Sir Benjamin Baker has shown that in bending a shell plate for a boiler the metal is of necessity strained beyond its elastic limit, so that stresses of as much as 7 to 15 tons per square inch may obtain in it as it comes from the rolls, and unless the plate is annealed these stresses will still exist after it has been built into the boiler. In such a case, however, when exposed to the additional stress due to the pressure inside the boiler, the overstrained portions of the plate will relieve themselves by stretching and taking a permanent set, so that probably after a year's working very little difference could be detected in the stresses in a plate built into the boiler as it came from the bending rolls and in one which had been annealed before riveting into place, and the first, in spite of its having been strained beyond its elastic limits, and not subsequently annealed, would be as strong as the other.

As another instance of the ideas very commonly prevailing, we may note that objection has been raised to the theory of wire gun construction in that it depends upon the assumption that the wire is not strained beyond its elastic limit, and that, as in the very process of being wound in place the wire must of necessity take a permanent set, the foundations of the theory are unstable, and that hence all the algebraic formulæ for the tension of the wire are useless. This objection does not seem to us well founded. No doubt, if the wire is wound on to the gun from another roller, it is permanently deformed in the process, and owing to its plasticity stresses of the nature of those due to bending will exist in it after being wound into place, and thus the ring tension will not be uniformly distributed over the section of the wire. As the wire is thin, however, these stresses should not be high, and as, moreover, the overstrained portions will be able to relieve themselves by a plastic yielding, if necessary, thus transferring part of their load to the neighboring understrained fibres, while the mean tension remains the same, there is no reason for supposing that this unequal distribution of stress over the section of the wire seriously affects the application of the formulas, or the validity of the theory on which these formulas are based. The conditions, indeed, are much the same as in the case of the boiler shell plate discussed above, and as experience proves that such boilers can be constructed successfully without annealing these plates, our conclusions as to the wire gun may be said to be confirmed by experience. The real objection to wire guns appears to be the want of longitudinal stiffness resulting in drooping of the muzzle, but this is a question not entering into the scope of this article.—*Engineering.*



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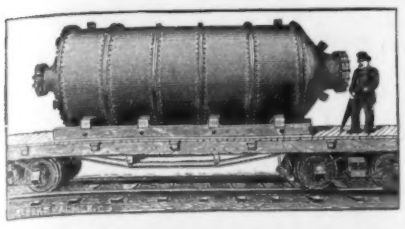

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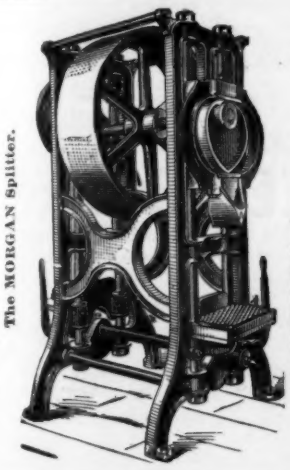

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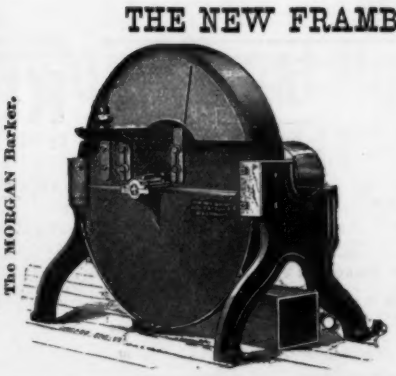

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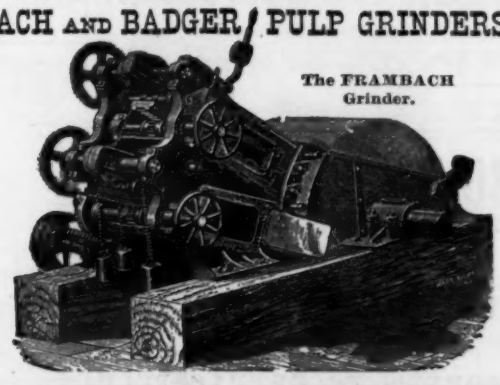

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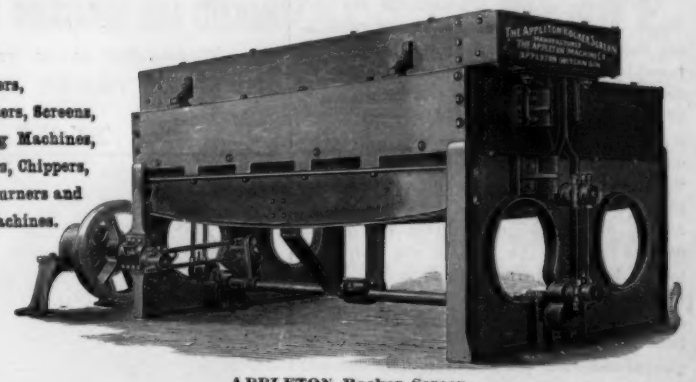

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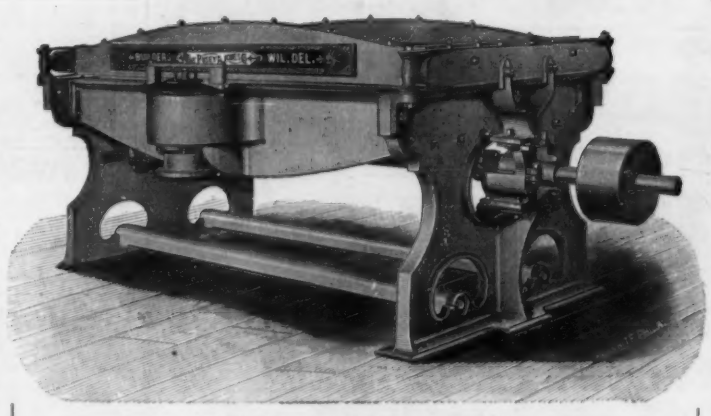

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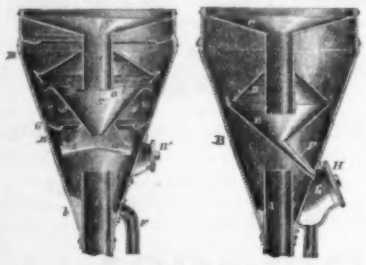
An appliance which has secured merited and widespread reputation among steam users is a simple device for attaching to the outlet of a steam exhaust pipe and guaranteed to completely stop the emission of water from such pipes. The noise with greasy spray in summer and icy slush in winter are intolerable accompaniments of unprotected exhaust pipes when located near public sidewalks and viewed from the standpoint of a passer by. Aside from such considerations the damage to roofs and



EXHAUST PIPE HEADS.

walls accruing from condensation deposits are certainly matters of much importance to property owners, and many bills for such repairs may altogether be avoided by the use of a head on the end of the pipe.

The accompanying illustrations are sectional views of the improved steam condensing vacuum exhaust pipe heads, as manufactured by the original inventor, W. C. Lyman, 49 Michigan street, Chicago, and the principle of their construction may be gathered from a glance at the inside combination. The exhaust steam entering the head meets the various deflectors, baffles and cones on its passage to the outlet, and by these means all water is disintegrated from steam and carried through the drip to the point selected, leaving what steam does escape dry and light in volume. No back pressure results from such action, but it is asserted that it has been proved by back pressure gauges and indicators that engines operate easier and better with one of these heads on the exhaust pipe than when exhausting in the open air.

The manufacturer, W. C. Lyman, has two styles of these heads on the market, the "A," or improved, and the "B." He guarantees both makes in every respect, but advises the use of the improved as being the most substantial and capable of giving the best results under all conditions of exhaust. They are now recognized as a necessity on all non-condensing plants, and are specified by leading architects, engine builders, and contractors and are operating all over the Union and in Canada and South America on Government, city and public office buildings, mills and factories, it being estimated that over fifteen hundred are in use in Chicago alone.

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5. Constant and thorough circulation of water throughout the boiler, so as to maintain all parts at one temperature.

6. The water space divided into sections so arranged that should any section give out no general explosion can occur, and the destructive effects will be confined to the simple escape of the contents; with large and free passages between the different sections to equalize the water line and pressure in all.

7. Great excess of strength over any legitimate strain; so constructed as not to be liable to be strained by unequal expansion, and if possible no joints exposed to the direct action of the fire.

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9. The heating surface as nearly as possible at right angles to the current of heated gases, and so as to break up the currents and extract the entire available heat therefrom.

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11. Proportioned to the work to be done, and capable of working to the full rated capacity with the highest economy.

12. The very best gauges, safety valves and other fixtures.

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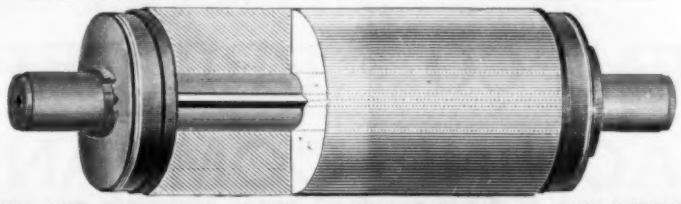

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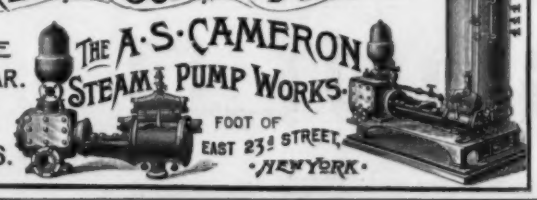

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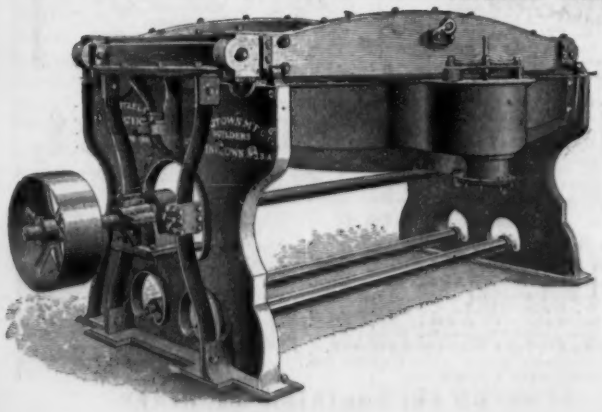

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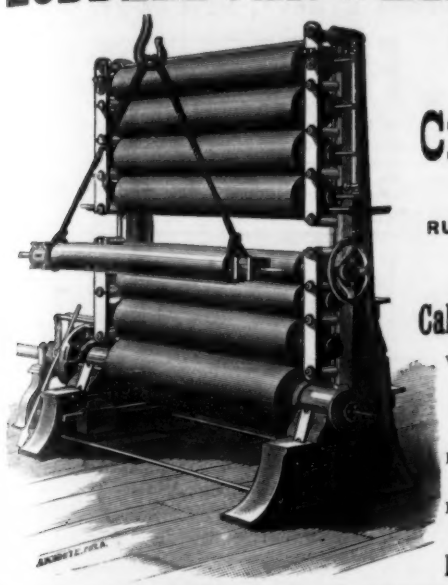

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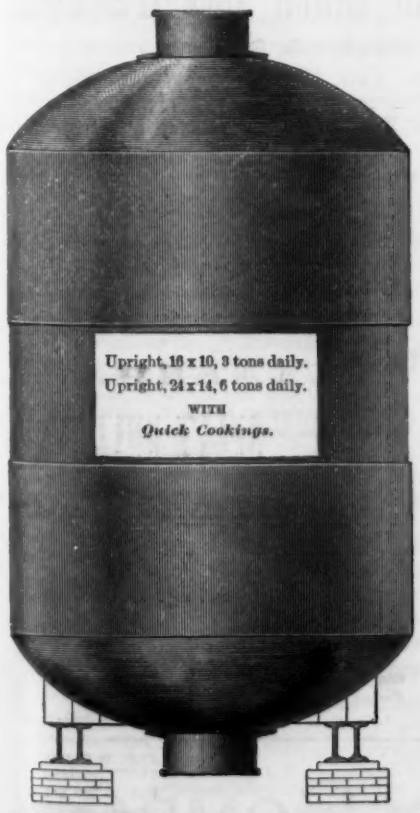

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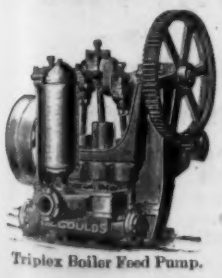

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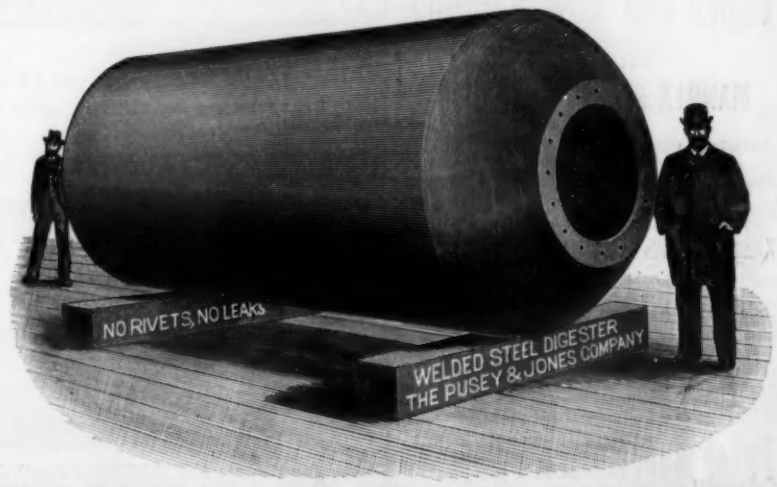

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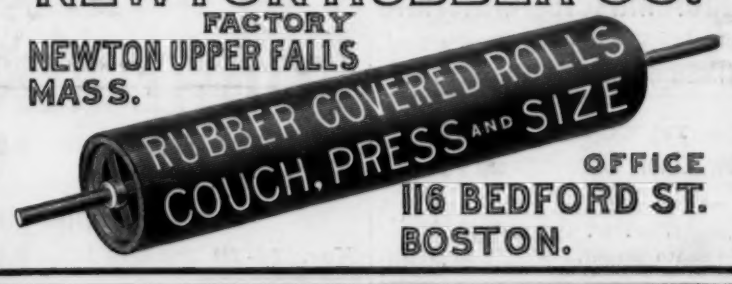

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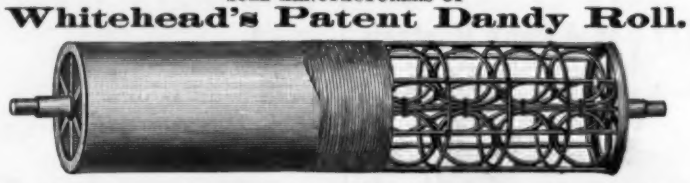

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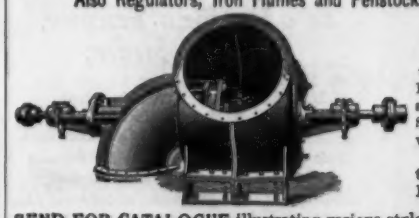

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